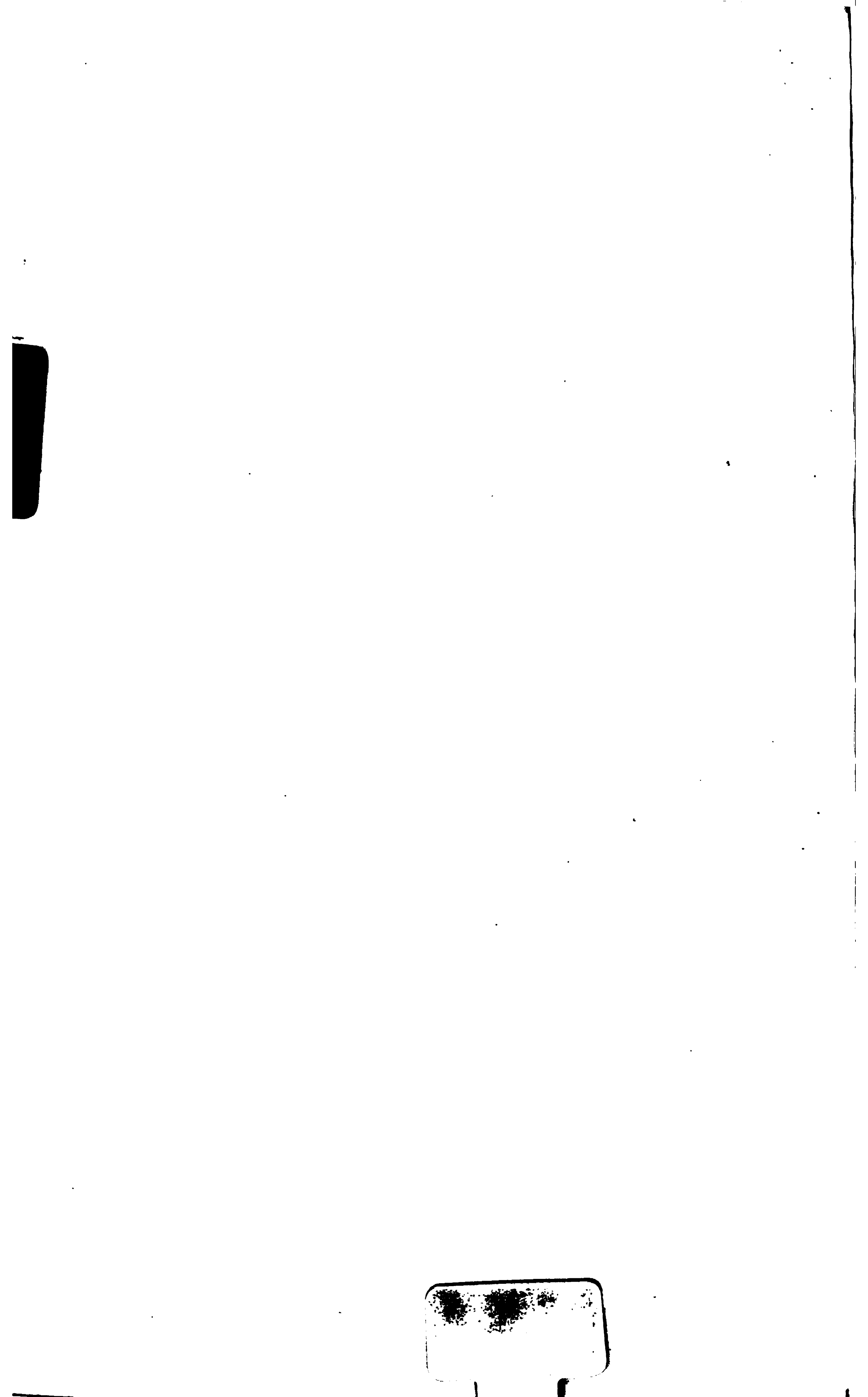


REPORT



OF THE

ADMINISTRATION

OF THE

MADRAS MUNICIPALITY,

FOR

1871-72.



MADRAS:
PRINTED BY H. MORGAN AT THE GOVERNMENT GAZETTE PRESS.

1873.

CONTENTS.

From Colonel C. DENISON, President of the Municipal Commission, Madras, to the Hon. W. HUDLESTON, Chief Secretary to Government, Fort St. George, dated Madras, 7th January 1873, G. No. 295.

I have the honour to forward, herewith, for submission to the Right Honourable the Governor in Council, the Administration Report of this Municipality for the official year 1871-72, and to request that it and the Auditor's Report, when received by Government, together with the Proceedings of Government thereon, respectively, may be directed to be published in the *Fort St. George Gazette.*

2. I have further to request that the Superintendent of the Government Press may be ordered to furnish Government with twenty complete copies of the Report and Proceedings above mentioned for transmission to the Right Honourable the Secretary of State for India in Council, agreeably to the Order of Government, 27th May 1869, No. 716.

From COLONEL AUGUSTUS RITHERDON, Officiating President of the Municipal Commission for the Town of Madras, to W. HUDLESTON, ESQ., Chief Secretary to the Government of Madras, dated Municipal Commissioners' Office, Madras, 10th December 1872.

SIR,—In conformity with Section 32 of Act IX. of 1867, I have the honour to submit a statement of the proceedings of the Municipal Commission during the past year, together with details (Statements I., II., and III.) of the Receipts and Disbursements on account of this Municipality.

Municipal Commissioners.

A few of the Commissioners having resigned their appointments, a slight change occurred in the corporation at the end of the year, therefore the Commission was composed of the following gentlemen, viz. :—

1st Division.

N. Ramalingum Pillay, Esq.
P. Poonoosamy Chetty, Esq.
Dr. W. J. vanSomeran.

2nd Division.

C. Pardasardy Naidoo, Esq.
V. Kristnamah Charriar, Esq.
C. V. Iyaswamy Moodelliar, Esq.
M. S. Shadagopah Moodelliar, Esq.

3rd Division.

J. G. Coleman, Esq.
P. Somasoonthrum Chetty, Esq.
P. Chuckeray Chetty, Esq.
Y. Vencataramiah, Esq.

4th Division.

J. W. Gantz, Esq.
Cyrus Grant, Esq.
V. Vanoogopalah Charry, Esq.
Dr. J. M. Joseph.

5th Division.

G. H. Cammiade, Esq.
Major G. B. Bowen.
Captain J. C. Lyster.

6th Division.

F. G. R. Branson, Esq.
F. Borthwick, Esq.
G. Hamnett, Esq.

7th Division.

Janay Jahan Khan Bahadoor, Esq.
P. T. Ramanjooloo Naidoo, Esq.
Captain H. F. Rodgers.

8th Division.

The Honourable Meer Humayun Jah Bahadoor, Esq.
M. Vencatasawmy Naidoo, Esq.
Hyder Jung Bahadoor, Esq.

Amendment of Act IX. of 1867.

To enable the Commissioners to apply the funds raised under Act IX. of 1867 for the diffusion of education ; the establishment and maintenance of hospitals and dispensaries ; the employment of Vaccinators and other medical practitioners ; the application of the Contagious Diseases Act ; and any local works of public utility ; and also to amend certain provisions of the said Act IX., Sections 10, 11, 12, 13, 99, and 120 were repealed, and Act V. of 1871 was passed and came into operation on the 1st April 1871. By Section 2 of this Act the Municipality was relieved from its contribution towards the maintenance of the Town Police force.

Change of the Municipal year.

Hitherto the collection of the several taxes and the adjustment of the books and registers kept by the Municipality were regulated by the Calendar year ; but under the provisions of Section 9 of Act V. of 1871, Government were pleased to direct, in their Proceedings in the Public Department, dated 25th April 1871, No. 539, that the official year shall begin on the 1st April of each year, and that the accounts for the first three months of 1871 should be closed and submitted to the Auditor who may be appointed to examine the accounts for the year 1871-72. The books were accordingly closed up to the 31st March 1871, and a new set opened for 1871-72, which is the first Municipal year that corresponds with the Government official year.

Subjects considered during the three months preceding the official year.

During the three months intervening between the Calendar year and the Municipal year as now altered, the Commissioners had under consideration several subjects, of which the following deserve special notice.

Pension to servants of the Municipality.

Mr. George Hamnett, a Commissioner of the 6th Division, proposed at the General Meeting held on the 31st January 1871, that a Pension Fund should be formed from the receipts from fines. The Commissioners doubted the legality of applying any portion of the Municipal Fund to such a purpose in the absence of any specific provision in the Act authorizing it, and they therefore resolved to refer the question to their legal advisers for an opinion.

The Government, however, in their Order, No. 415, dated 29th March 1871, passed on the resolution of the Commissioners, set the matter at rest by stating that, "provision has been inserted in the "Bill for the amendment of the Municipal Act, which has been passed by the Legislative Council, to "enable the Commissioners to grant pensions from the Municipal Fund."

New General Market.

This subject has, as in previous years, continued to engage the attention of the Municipality, but owing to various causes has not yet been sufficiently developed for commencing the work. The notice published by the Improvements Committee in 1870, calling for designs, resulted in the receipt of a large number of plans from about a dozen competitors. After careful examination by the Committee, the first prize of Rupees 1,000 was awarded to Mr. R. R. Baynes, B.A., of Calcutta, and the second to Mr. R. F. Chisholm, the Consulting Architect to the Government of Madras. These designs fulfilled the conditions laid down in the notice published

by the Committee, and were therefore entitled to the prizes, but certain modifications in the details were considered necessary for meeting local usages, and with this view Mr. Loch, the late Officiating President entered into correspondence with Mr. Robert C. May, M.I.C.E., of London, and obtained from him a revised plan with improved ventilation, and also a price list of various articles of iron work. The late unprecedented rise in the price of iron in England has stopped further proceedings for a time.

Lighting with Gas.

In 1863, and again in 1865, the Singapore Gas Company submitted proposals for introducing Gas into Madras, but without success; and after a lapse of about six years they renewed their application on revised terms. Its consideration was referred to a Committee composed of the gentlemen entered in the margin, who, while favourably disposed towards the project, recommended that the views of Government be ascertained on certain of the concessions asked by the Company, viz. :—

Captain Edgcome, R.E.
Mr. Gover,
,, Vencatasawmy Naidoo,
Mr. Shadagopah Moodelliar,
,, Coleman.
,, George Hamnett.

I.—The grant of exclusive privileges to the Company in respect of the supply of Gas.
II.—The grant of a site for gas-works near Burghall's stables.
III.—The transfer of the Fort gas-works at a valuation, &c.
IV.—The exemption of plant, materials, and coal from Customs duty.

The Government were accordingly addressed, and in their Order, No. 679, dated 20th May 1871, passed on the letter from the Municipality, the Commissioners' attention was drawn to the low condition of the Municipal Fund; the liabilities they had already incurred; and the additional burden such a proceeding as the lighting of the town with gas would involve. The proposal of the Gas Company was therefore not further entertained.

Meetings of the Commissioners.

During the official year 1871-72, there were five General Meetings, one Special Meeting, and one Adjourned Special Meeting of the Commissioners held on the following dates :—

General Meeting held on the	... ...	8th June 1871.
Special do. do.	... ...	16th August ,,
Adjourned Special Meeting held on the	... ...	18th August ,,
General Meeting held on the	... ...	31st August ,,
Do. do. do.	... ...	31st October ,,
Do. do. do.	... ...	18th January 1872.
Do. do. do.	... ...	29th February ,,

All matters of importance, before being submitted to the Commissioners in meeting, were referred to Committees, who held the following Meetings for investigation and discussion :—

2—by the Water Supply Committee.
5—by the Budget Committee.
4—by the Gas Committee.
3—by the Improvements Committee.
1—by the School Committee.
4—by the Lands under Cultivation Committee.
7—by the Market Sub-Committee.
4—by the Pension and Gratuity Committee.
4—by the Engineer's Department Committee.

The principal subjects recorded on the Proceedings of the Commissioners during the past year, in exercise of the powers and authorities conferred upon them by the Act, are given in the following epitome.

Act V. of 1871.

On the Order of Government directing that this Act shall come into operation and take effect from the 1st April 1872, being read at the General Meeting of the 8th June 1871, Dr. vanSomeran requested that the Minutes by several Commissioners, on the subject of the reduction in the pay of the Collector under the new Act, be read. In these Minutes the majority of the Commissioners were for either continuing the salary (Rs. 600), drawn by him under Act IX. of 1867, or for granting a personal allowance of 100 Rs. in addition to the 500 Rs. allowed by the revised Act. Two of them, however (Mr. Hamnett and Major Bowen), were of opinion that the Collector had no cause to complain, inasmuch as "it was in a measure determined that Mr. "Jesudasen should be removed from his appointment of Collector, and that, until the issue of the "Order of Government, dated 1st April 1871, he held the appointment on probation." On these Proceedings being submitted to Government for orders, His Excellency the Governor in Council was of "opinion that to assign to him (the Collector) a personal allowance would be a violation of the law."

Appointment of Official Visitors from the Commissioners for Hospitals, &c.

The Commissioners were of opinion that they should be invested with some control over the medical institutions, the charges on account of which are borne by the Municipality. It was suggested that Visiting Committees, of which the President should be an ex-officio Member, should be appointed, and that all payments in connection with the institutions should be made from the Municipal Office on bills passed by the Visiting Committees.

The Government recognized the justice of the Commissioners' request to be admitted to a share of the control over these institutions, and were also sensible of the benefit they are likely to derive from their co-operation and supervision in the interest of the rate-payers; but owing to a large portion of the charges transferred, consisting of the salaries of the Government employés, which are regulated by general rules, and which could be audited satisfactorily only by the Accountant-General, the Government were of opinion that the proposed system of payments would not be suitable.

The appointment of Official Visitors, from the Commissioners with the President as ex-officio Member, was sanctioned, and their powers were limited to addressing the Inspector-General, Indian Medical

Department, on any matter connected with the proper economy or administration of these institutions. It was also ordered that the annual estimate of expenditure was, in the first instance, to be sent to the Municipal Commissioners for their remarks and the detailed Annual Statement of expenditure was also to be forwarded for their information, and that they were to be at liberty to make such report on the expenditure and management of the Dispensaries as may appear necessary.

"The principle which the Government think should be adopted in regard to all these institutions "is, that the Municipal Commissioners, without any direct interference with their management, should "be in a position to advise Government on any points connected with the comfort and well-being of the "patients, and the proper economy of administration which appear to them to require amendment."

Under this Order of Government, No. 1,266, dated 16th August 1871, the following gentlemen were appointed by the Commissioners as Official Visitors for 1871-72 :—

1st.—Native Infirmary and Black Town Dispensary.

Mr. G. B. Shaw,	Mr. M. S. Shadagopah Moodelliar,
" N. Ramalingum Pillay,	" J. G. Coleman,
" C. V. Iyasawmy Moodelliar,	" Y. Vencatramiah Garu.

2nd.—Vepery Dispensary.

Mr. Cyrus Grant,	Major G. B. Bowen,
" V. Vanoogopala Charriar,	Mr. G. Hamnett,
" G. H. Cammiade,	" F. G. R. Branson.

3rd.—Triplicane Dispensary.

Mr. P. T. Ramanjooloo Naidoo Garu,	Honourable Meer Humayun Jah Bahadoor,
Captain H. T. Rogers,	Mr. M. Venkatasawmy Naidoo Garu.

Pensions and Gratuities.

On the introduction of Act V. of 1871, the question of granting pensions, &c., to Municipal officers and servants was carefully considered in all its bearings by a Committee, before the subject was discussed at a General Meeting. The Commissioners unanimously resolved on the 18th January 1872, that the employés of the Municipality should be admitted to the same advantages as the Members of the Uncovenanted Service, and they specified at the same time those classes of their servants which should be classified as inferior.

Application was hereon made to Government for the necessary authority, when the following Order, No. 420, was passed on the 4th April 1872, "Under Section 8, Act V. of 1871, the Governor "in Council is pleased to prescribe the provisions of the Civil Pension Code (Government of India "Notification, 10th January 1872, No. 239), as the Rules under which retiring allowances and "gratuity may be allowed by the Municipal Commissions to officers and servants appointed under "Madras Act IX. of 1867.

Budget Estimates for 1872-73.

These were prepared and circulated early in January 1872. At the General Meeting held on the 18th idem, a Committee composed of the Commissioners in the margin,* was appointed to take them into consideration, and their report with the amended estimate were discussed at the General Meeting of the 29th February 1872. The suggestions made by the Committee, which were not numerous, were adopted by the Executive with one exception, which referred to the recommendation, that the pay of the Assistant Engineer should be raised to Rupees 400 per month, until the Executive Engineer again assumes full charge of his duties. This subject was, however, put forward as a substantive proposition by Mr. George Hamnett, seconded by Mr. V. Kristnamah Charriar, and passed by the Commissioners.

* Mr. Shadagopah Moodelliar, " Somasoonthrum Chetty, " J. G. Coleman, " Kristnamah Charriar, " Cammiade, " Venketramiah, Major Bowen, and Dr. vanSomeran.

TRAMWAYS.—A proposal from Mr. Henry Gore, C. E., Engineer and Agent to the British and Foreign Street Tramway Company, for the establishment of street tramways in Madras was considered by the Commissioners in General Meeting of the 18th January 1872, and it was resolved "that they "will be prepared to consider any proposals which may be hereafter made for the construction of "street tramways in Madras by the Company represented by Mr. Gore."

Changes in the Executive Officers.

There has been only one change in the officers. Mr. George Hope Ross, who was acting as Sanitary Inspector at the commencement of 1871, was superseded by the appointment of Mr. Charles E. Gover under Act V. of 1871, on the 1st April of the same year. The latter Officer's services were, however, required by Government for tabulating the Census Returns of the Presidency, and they were accordingly transferred about the beginning of 1872, when Mr. Ross was again placed in charge of the Sanitary Department, on the following letter from Mr. Loch to Government, dated 20th January 1872: "The "arrangement I would propose is this, that, on Mr. Gover's being gazetted to take charge of the "Presidency Census, Mr. Ross, who has been acting as his Assistant in charge of the Sanitary Depart- "ment, and who for more than a year previous to the passing of Act V. of 1871, officiated as Sanitary "Inspector, should be appointed to act in his place with an addition to his present pay of, say, Rupees "100 per mensem. Mr. Ross is perfectly qualified to manage the routine work of the Department."

DRAINAGE.—The Municipality has ever regretted, in rendering an account of each year's work, that nothing had been done to improve the drainage. The necessity for such a measure is now more urgent than before, when the people got their supply of water from wells. The water supply works will soon be in full operation, and will tend in a great measure to raise the sub-soil waters and render the houses damp and unwholesome. Some attempt was made to reduce the nuisance arising from the main drain outfall at the North-East corner of Fort St. George. The works, owing to various causes, are not yet completed, and in the opinion of the Executive Engineer will never effect much good. The only remedy is, to carry out a proper system of drainage prepared on the most approved principles.

The subject engaged the attention of the Commissioners at their Meeting on the 31st August 1871, when they were informed that Mr. Lee's (the Executive Engineer) time had been so much taken up with the water-works, that he had been unable to attend to the preparation of a drainage scheme. It was then suggested that the services of a competent Engineer should be engaged for the work, and on reference being made to Colonel Carpendale, the Secretary to Government in the D. P. W., it appeared that there was considerable difficulty in getting a suitable person. The Commissioners came then to the conclusion that it was desirable to wait until their own Engineer could undertake the work before taking any further action in the matter.

WATER SUPPLY OF MADRAS.

The subject which naturally suggests itself as first demanding attention, in reporting on the works done during the year, is that of Water Supply. The system proposed has already been described in former reports, and the Executive Engineer's report (Appendix G) for the year under review, enters so fully into details that it is sufficient for me briefly to state its general features. The object which the Commissioners had in introducing the scheme was to place an abundance of good wholesome water within easy reach of the whole inhabited area that was proposed to be supplied, at a small outlay, and to remove at least one active source of disease. I need not say what an inestimable blessing the supply of water is to the people of this city, more especially the poor, who were compelled in several localities to take water from tanks and ponds fed by the sewers of the town. It was but very recently, in the course of my sanitary inspections, I discovered how excessively filthy are the tanks attached to the several Pagodas, and what astonished me most was, that these tanks were resorted to principally by Brahmins and high caste people. In one tank, that attached to Cutchala Eeswarer Pagoda, in Armenian street, a green fermenting crust had formed on the surface, which was driven from side to side as the wind blew. The appearance of this mass was worse than anything I have ever seen in our worst drains, and yet there were people who resorted to it for bathing purposes.

This will all be soon cleaned and filled with wholesome water and set apart for bathing purposes, while all the water intended for domestic consumption will be drawn from covered fountains. I am in expectation of this work being carried out in another month, and then we shall have one of the greatest known safeguards that exists against cholera. There is, however, another cause that is very fertile in propagating this disease, and that is bad drainage. The soil on which Madras is built is mostly sand, and by its open porous nature it has hitherto in a great measure mitigated the evils arising from damp: but it cannot be expected that 32 million cubic yards of water (the quantity it is proposed to bring into Madras) could be poured year after year over this soil with impunity, and it is simply a matter of time when the sub-soil water of Madras will rise so high as to render the ground-floor of the houses damp and unwholesome. Dr. Leith, Health Officer of Calcutta, in his report for 1855, says :—" The Sections with houses closely built in dry streets although densely peopled, being as usual proportionally free from disease than when there is much water," and the experience of scientific men, such as Professors Petten, Koffer, and Theirsch, tend in the same direction. The late Mr. Gover, at page 40 of his report for the year under review, strongly urged the improvement of our drainage, and considered it as the first of the remedial measures to be undertaken for reducing the high death-rate. It is, therefore, of vital importance to the people that the consideration of a proper drainage scheme for Madras should not be delayed even a single day.*

The evils of want of drainage.

CENSUS.—This undertaking, which had been under consideration for some years past, was carried out under the able and energetic supervision of the late Mr. Charles E. Gover. The enumeration was commenced in September 1871 and the final Census taken on the 15th of November of that year, the results of which show the population to amount only to 397,552 souls.

This amount is very much less than previous returns. For several years it was believed that the population was no fewer than 750,000 people, while Sir Charles Trevelyan in 1863, when giving evidence before the Royal Sanitary Commissioners stated that one million persons dwelt in Madras; and except in two cases, no figure lower than 450,000 has ever been accepted since the beginning of the century. The Census Returns of 1822, prepared under the guidance of Major W. Ormsby, Superintendent of Police, give the number at nearly 470,000, while Mr. Horgan's statement of the operations carried out under his directionsin 1863, shows only 427,771. That both these Returns are full of the grossest errors, is clearly shown in Mr. Gover's letter forming Appendix A to this report.

The admirable arrangement made by that Officer for the enumeration, and the complete system of check devised by him to prevent error, have led the Commissioners to accept, with the greatest confidence, the results shown in the elaborate tables published with the Mortuary and Sanitary Report for 1871-72 (Appendix B).

Owing to the untimely death of Mr. Gover, the full report on the Census, with the complete tables showing the divisions and classes of the community, has not yet been published. Much of this valuable work had passed through the press in Mr. Gover's life-time, and the Sanitary Commissioner, Dr. Cornish, has kindly undertaken to finish the work, so ably commenced by the Census Officer.

CONSERVANCY DEPARTMENT.—In Appendix B will be found a complete record of the operations of the Conservancy Department for the year. It will be observed that every endeavour within the limited means of the Municipality was systematically and energetically carried out for the improvement of the Town.

It is my painful duty to place here on record the great loss the Municipal service has suffered in the unexpected death of Mr. Gover, the Sanitary Inspector. His energy and zeal are well known to the Government, and I have only to add my regret that he was not spared to see the fruits of his labour.

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* While this was passing through the Press, the subject was again considered and a Committee appointed for reporting on the drainage of Madras.

THE COOUM.—This river still continues to be in the same insanitary and unsatisfactory condition as in former years. The Government expressed their willingness to transfer the river to the Commissioners and to hand over the usual Budget grant for conserving it; but the Municipality were unwilling to accept it on these terms; and proposed that it should either be handed over in a state of proper conservancy, or funds supplied by Government for the Commissioners carrying out the necessary works.

The river Cooum, which ought to be an ornament and a blessing to Madras, is now only a source of disease, and the receptacle for the sewage of about a third of the population.

An expenditure of 1,800 Rupees was incurred by Government in the removal of the worst of the silt banks in its bed, and the raising of the banks with the material taken from it.

SEWAGE FARMS.—The experimental farms established by Mr. Standish Lee, Executive Engineer, in 1868, with the view of testing whether sewage could be inoffensively utilized by applying it to irrigation, have been continued with success, both from a sanitary and financial point of view. At the end of the official year they more than paid all the expenses. The late Mr. Gover in his report says—"after the most careful and long continued observation under every variation of season and circumstance, "there appears every reason to believe that there has at last been discovered a mode of dealing with "the sewage of this city, by which it can at once be made innocuous profitable to the public, and "highly useful in reclaiming waste lands, and rendering it suited for the cultivation of food either for "man or animals.

"Dr. Cornish, who in his report for 1869 said, in alluding to these farms, "the experiment * * "promised very well indeed so long as the rainy season lasted, but since the dry hot weather of "1870 has set in, the grasses have not thriven well under sewage" ** has now, it is gratifying to observe, in his latest report to Government, admitted its entire success in these words—"The crops of "grass are good." ** "The sales of green grass at present are sufficient to pay the expenses of up-keep "of the farms."** "I am quite satisfied that there will be no difficulty in applying sewage beneficially "to the culture of grass in this town."** "My own view is that the time has come when the various "Municipal Associations should take the lead in demonstrating to the cultivators the value of the "manure they now esteem so lightly, and that for this purpose suitable parcels of land should be rented "near the various towns, on which to utilize the town waste."

This important sanitary problem may therefore now be pronounced as having successfully passed through the stage of experiment and been firmly established.

As this is a subject, the success of which is closely watched both in India and at home, an interesting report from the pen of the late Mr. Gover is therefore published in Appendix C.

REMODELLING OF PARCHERRIES.—This is a new field of Municipal operations, and owes its introduction to the late Mr. Charles E. Gover. Under this heading is included not only the hamlets of the Pariahs, as the name would indicate, but also the hutting grounds of the poorer classes. These were always known to be centres for the propagation of epidemics, and yet until within the last year or two, were deemed beyond the pale of all public effort or expenditure.

Mr. Gover devoted the greatest portion of his attention, out of doors, to the improvement of these hovels, and a full report of the mode pursued and success obtained will be found in his report forming Appendix B.

The expenditure under this head is Rupees 9,354-1-11.

VACCINATION.—The Municipality contributed Rupees 3,028 towards this object, and judging from the latest report published, that of 1870-71, the results for this heavy expenditure are far from satisfactory. The following extract from a report of the late Mr. Gover proves this clearly.

"** I have no means of knowing the staff engaged, and for which we pay in 1872, but must "argue from the latest report within my reach, that for 1870-71. I learn from it that there were "engaged in Madras, omitting the Vaccine Depôt:—

1 Superintendent	on Rupees	70 per mensem.
3 First-Class Vaccinators	„	18 „
9 Second-Class „	„	10 „
Total 13 Vaccinators at a cost of	„	214 „

"These 13 men performed 4,576 vaccinations, of which only 69·54 per cent. were known to be "successful, that is, that 3,203 persons were successfully vaccinated. This gives an average per Vaccinator of 246 persons per annum protected by his agency. But excluding Sundays there are 313 "days in the year, so that each Vaccinator performed about four vaccinations in five days! If we "count all operations the figures are not very different, for then each man performed 352 operations in "313 days, that is, vaccinated eight persons in seven days! In salaries alone each vaccination cost 8 annas "3 pies. Do not these results appear ludicrous? Here are men in the midst of a great city with nothing "else to do, and yet they can only vaccinate one person daily. In South Arcot, where the men have to "wander from village to village and half their time was spent in walking, 12 Vaccinators performed "14,419 vaccinations, each man doing nearly four times as much work as those in Madras. Other "examples can easily be chosen but are not necessary. Is it too much to expect that each Vaccinator "should perform three vaccinations daily? Even that is ludicrously small work. But every soul born "in Madras could be vaccinated at this rate.

"Thus 13 Vaccinators doing three vaccinations per day (excluding Sundays) will protect 12,207 "persons each year, add to these 3,500 persons vaccinated at the depôt as now, and we should "obtain a total of 15,707 persons vaccinated each year. But less than this number of persons is born "each year, and certainly not more than 12,000 reach the age of three months, and thereby become fit "subjects for vaccination. So that, if the present staff worked at the rate above named, it is larger "than would be permanently necessary. In South Arcot each Vaccinator performs an average of four "vaccinations daily, is an average of three too much to expect in Madras?

"We have ample proof that it is not. Thus, when Dr. Shortt brought his great energy to the task, "2,684 persons were vaccinated by his ambulatory Staff of, say, six Vaccinators in the month of May "alone, or 120 per diem, or 20 per Vaccinator per diem Why cannot something like this be done at "all times? It appears to me that the present system is radically wrong, and is condemned by the

"great fact, that each Vaccinator does but one case per diem. It is my duty strongly to represent this, "and to support Dr. Cornish's proposition that the Vaccinators should be paid by results, so much for "each successful operation.* *"

REGISTRATION OF BIRTHS AND DEATHS.—The organization of this department has not worked efficiently. Under Section 219 of the Act, the office of the Registrar should be in his own house. The class of people who will accept the salary of 30 Rupees attached to this appointment live in poor districts, the streets of which are unknown to persons not living on the spot. No European can find the Registrar's house, nor are the natives able to do so without much trouble. To make the offices better known the following places were selected :—

For 1st Division	Central Police Station, Trivatore High Road.
„ 2nd „	Police Tannah, opposite to Patcheappah's School.
„ 3rd „	Municipal Commissioners' Office.
„ 4th „	Police Tannah, Perambore—Gantz Road.
„ 5th „	Commissioner of Police Office.
„ 6th „	Police Tannah, Flower's Road—Kilpauk.
„ 7th „	Round Tannah, Mount Road.
„ 8th „	Police Tannah, Royapettah.

The result of this arrangement shows 8,264 births as registered, but there is no doubt that out of a population of 397,552 souls there ought to have been a larger return.

ROADS.—The roads are under the entire charge of Mr. Stephenson, Assistant Engineer, and cost during the year for reform and repair Rupees 73,948, against Rupees 76,970 in the previous year. As already mentioned in another part of this report, Mr. Stephenson's salary was raised at the commencement of 1871-72 by the Commissioners to Rupees 400 a month, in consideration, I understand, of the extra duties devolving upon him.

PEOPLE'S PARK.—This continues to be the favourite resort of the "people," and by very careful management has been almost self-supporting (so far as its up-keep) during 1871-72, as in the three previous years. Several additions and improvements were, however, carried out which have tended to raise the contribution from the Municipal Fund from 3,000 Rupees to Rupees 7,737. A list of these new works is given in the Assistant Engineer's Report (Appendix F.)

The circle round the band-stand has been very tastefully planted, and shrubberies established in other parts of the Park, which make it both attractive and pleasant. The public owe these improvements to the great interest taken in the Park by Mr. Loch, the late Acting President.

The following additions were made to the Zoological specimens :—

2 Foxes.	1 Tigress.	1 Wild Hog.
1 Wild Boar.	1 Black Monkey.	2 White Rats (Australian).
1 Elephant.	1 Aden Monkey.	1 Elk.
2 Tigers.	1 Civet Cat.	1 Bison and Calf.

NAPIER PARK.—In previous reports the history of this Park has been given, and the legal and other difficulties which were encountered in the prosecution of the work. The ground skirting the Cooum, extending from the Government House bridge to Law's bridge, which was claimed by the Shotriemdar of Chintadrepettah, was purchased from him for Rupees 2,500.

The Park now contains 14 cawnies, or about 18 acres, from which, deducting the roads, paths, ornamental water, gateways, inclosure palings, clumps of palm trees, avenues, shrubberies, and the Napier Caste-girls' School, about 12 acres are left, and the whole of this area has been put under hurrialie grass, the sale of the cuttings from which realized Rs. 637-9-2.

The Park is not yet fully developed, and several of the roads and ornamental walk shown on the plan have not yet been laid down. It will be remembered that this site was, within the last two years, occupied principally as a Parcherry by the grass-cutters for the horses of the Governor's Body Guard, and by a depôt for the deposit of the sweepings of the surrounding districts. It is, therefore, no matter of surprise, that two of the filthiest sewers of the town pass through the grounds and debouch their contents into the Cooum at the eastern limit of the Park. Until these are removed, it could scarcely be expected that the public would resort to it in large numbers. These sewers will be removed when Madras has a proper system of drainage, which it is hoped will be taken in hand before long.

COLLECTOR.—The Collector's Report is published in Appendix D, and from the details given in it, Government will observe that the arrears on account of the House and Land Rates which stood at Rupees 1,06,344 in 1866 have been steadily reduced year after year by Mr. Jesudasen Pillay, until the outstandings at the end of 1871-72 only amounted to Rupees 10,812. This result is very creditable to Mr. Jesudasen Pillay, and proves that the Collecting Agency under him has been successfully worked. My predecessor, in addressing Government on the 30th April 1872, said—"I think it right to state that "I have every reason to be satisfied with the manner in which Mr. S. Jesudasen Pillay has conducted "the duties of his office, since I have had the honour of Officiating as President of the Municipal Commis- "sion."

General Conservancy Establishment of the Town, &c.

The immediate working of this establishment devolved on Mr. Ross, the Assistant Sanitary Inspector, under the general superintendence of the late Mr. Gover, whose time was, for the most part, taken up by Census matters up to about November 1871, and entirely from that date to the end of the year. The credit for the economic working of the establishment as given below is therefore due to Mr. Ross :—

Budget grant	Rs. 1,62,682
Expenditure	„ 1,50,772
Saving effected	Rs. 11,910

The post of Sanitary Inspector having since fallen vacant, my views on Mr. Ross' claim to the appointment were submitted to Government in my letter No. 184, dated 25th September 1872.

SUNDRY COLLECTIONS.—The Engineering and Conservancy Departments, in addition to their other work, have also to collect certain items of Municipal income from miscellaneous sources. These amounted in the year to about 34,000 Rs. as under—

ENGINEER'S DEPARTMENT.

	RS.	A.	P.
Sale of land and old materials ...	1,654	13	10
Esplanade Hay, &c.	1,606	6	5
Napier Park	637	9	2
People's Park	5,725	5	7
Clippings from avenue... ...	751	9	7
Water-works	152	1	0
Sundry items	466	11	8
Total...	10,994	9	3

CONSERVANCY DEPARTMENT.

	RS.	A.	P.
Rent of market stalls	7,504	11	9
Slaughter-house fees	6,128	13	3
Strand rents	506	5	7
Fees for offensive trades, &c. ..	3,625	0	5
Sale of rubbish	3,032	5	0
Sewage farms	1,287	10	2
Police fines	724	4	0
Contractor's fines, about ...	500	0	0
Total...	23,309	2	2

REVENUE.

By a Resolution adopted at their General Meeting held on the 8th of June 1871, the Commissioners sanctioned the levy, for the year under review, of the Taxes, Tolls, and Rates following, viz.:—

1st.—Tax on Carriages, Horses, and other Animals, as provided in Sections 36 to 43 of the Act;

2nd.—Fees on Carts and other wheeled Vehicles without springs, as provided in Sections 45 to 47 of the Act;

3rd.—Tolls on Carriages and Animals entering the Town, as provided in Sections 49 to 55 of the Act;

4th.—Tax on Arts, Professions, Trades and Callings, and Liquor Licenses, as provided in Sections 57 to 62 of the Act; and

5th.—Rates on Houses, Buildings, and Lands at 7½ per cent. on the annual value thereof, as provided in Sections 69 to 82 of the Act:

And such Resolution was approved of by Government in its Proceedings in the Public Department, dated the 17th of August 1871, Nos. 88, 89.

TAX ON CARRIAGES, HORSES, AND OTHER ANIMALS.—Under an arrangement effected during the presidency of Major Bowen, and since the 12th of September 1870, the collection of this tax, which was theretofore attended to by the Collector, has devolved entirely on the Assessor. The net sum collected during the year, after deducting refunds, is Rupees 37,680-8-0 (including arrears) as shown by the Statement A hereunder given :—

A.

Statement of Collection of Tax on Carriages, Horses, and other Animals during the official year 1871-72, under Sections 36—43 of the Act.

Period to which the collection relates.	Amount collected.		
Payable for half-years ending 30th April and 31st October.	RS.	A.	P.
For the half-year ending 30th April 1870	9	8	0
Do. 31st Oct. „	144	8	0
Do. 30th April 1871	3,461	8	0
Do. 31st Oct. „	19,964	12	0
Do. 30th April 1872	14,100	4	0
Net Rupees ...	37,680	8	0

It will be observed from the Comparative Statement B given below, that the collection during the year under report is less by Rupees 8,017 than that of 1868-69, by Rupees 5,105 than that of 1869-70, and by Rupees 3,517 than that of 1870-71, and by Rupees 5,546 than that of the average of the last-mentioned three years :—

B.

Statement of Collection of Tax on Carriages, Horses, and other Animals during the official year 1871-72, under Sections 36—43 of the Act, as compared with the three years preceding.

Particulars.	1868-69.	1869-70.	1870-71.	Total of the three years.	Average of the three years.
Net collection	45,698	42,786	41,198	1,29,682	43,227
Net collection in 1871-72	37,681	37,681	37,681	1,13,043	37,681
Increase in 1871-72 ..	......	......	......	......	......
Decrease in 1871-72 ...	8,017	5,105	3,517	16,639	5,546

The Statement C given below points to the number of each description of carriages and animal in respect whereof the tax was collected during the year under report, as compared with the three year preceding it, exhibiting a considerable decrease in the number licensed during the year under notice:—

C

Statement of Carriages, Horses, and other Animals registered during the official year 1871-72, *under Sections* 36—43 *of the Act, as compared with those registered during the three years preceding.*

Particulars.	1	2	3	4	5	6	7	8	9	10	11	12	
	4-wheeled Carriage on springs drawn by a pair of Horses.	4-wheeled Carriage on springs drawn by a Horse, or a pair of Ponies.	2 wheeled Carriage on springs drawn by a Horse, Male Bull, or Bullock	Horse over 13 hands.	Horse of, or under, 13 hands, or Mule.	Elephant.	Camel.	Horse of, or under, 11 hands.	Bullock or Bull.	Male Buffalo.	Ass.	Dog.	Total.
Registered during 1868-69.	495	3,153	1,856	3,213	2,259	2	...	523	5,401	11	66	1,294	18,273
Do. 1869-70.	449	2,991	1,850	2,939	2,189	2	...	542	4,886	5	71	1,014	16,938
Do. 1870-71.	444	2,835	1,815	2,888	2,039	1	..	553	4,624	2	65	900	16,166
Total...	1,388	8,979	5,521	9,040	6,487	5	...	1,618	14,911	18	202	3,208	51,377
Average of the three years above given... ...	463	2,993	1,840	3,013	2,162	2	...	539	4,971	6	67	1,070	17,126
Registered during 1871-72.	408	2,528	1,783	2,610	1,848	3	...	488	4,452	1	74	667	14,862
Increase in 1871-72 ...	...	...	...	...	...	1	...	...	...	...	7	..	8
Decrease in 1871-72 ...	55	465	57	403	314	...	...	51	519	5	...	403	2,272

N.B.—The figures above set forth indicate the aggregate number of Carriages and Animals registered during both half years, and include cases in which refunds have been made.

The collection has thus fallen short of the budgeted amount (which is Rs. 45,000) by upwards of Rs. 7,000; and the falling off is owing chiefly to the changes, from time to time, made in the agency and supervision. In and prior to 1869 the collection of this tax was effected by a distinct agency working under the Collector, which agency, consisting as it did of three Inspectors on Rs. 85, Rs. 65, and Rs. 65, respectively, and a few Hurkarahs, brought in Rs. 45,066 in 1868 and Rs. 44,115 in 1869. For 1870 that agency was dispensed with, and a fresh one composed of eight men on Rs. 15 per head per mensem, with a couple of peons, was substituted for it: but the result of its working having proved to be more unsatisfactory than that of the previous agency, it was done away with in the latter part of 1870, and the whole work was transferred to the Assessment Department to be there attended to by the Trade-tax Inspectors, and superintended by a Chief Inspector then newly appointed for that purpose, under the Assessor's supervision. Looking, however, to the most important and responsible character of the duties which the Assessor and the Trade-tax branch of his Establishment had to perform not only in the assessment but also in the *Collection*, as well by prosecution as by the summary procedure of Bill and distraint (including the disposal of appeals) of the Profession and Liquor Taxes, and bearing in mind the arduous duties which the Assessor and the House and Land Rates branch of his Establishment had to attend to in the assessment, disposal of appeals, and revision in connection with Rates on Houses, Buildings, and Lands, and taking into consideration the labour, both in and out of doors, which the working of these taxes respectively involve, it has been impossible for the Trade-tax Inspectors, in addition to their former work, to have managed the collection of Wheel-tax with such a degree of efficiency and satisfaction, or for the Assessor to have exercised such supervision in the matter, as, under the circumstances, could be wished or desired. In fact, the transfer has, in a great measure, impeded the work of the Assessment Department in connection with House and Land Rates and Profession and Liquor Taxes. The ill success, with which the working of this tax under the organization effected in the latter part of 1870 was attended, induced the Commissioners lately to do away with the Superintending Inspector, and to re-introduce a fresh separate agency composed of eight Inspectors. This organization having involved more labour on the Assessor personally than ever, it is proposed, as my predecessor intended to do, to relieve the Assessor of the charge of Wheel-tax, and to place the new agency as formerly under the Collector, who, I have reason to believe, can afford to bestow more time and attention to its better supervision than the Assessor (unaided as he has been) has yet been able to do. During the year 132 prosecutions were instituted in the Police Courts in connection with this tax, of which 116 were compromised before hearing; in four cases the Defendants were tried and convicted and sentenced to pay penalties amounting in the aggregate to Rupees 4, whereof Rupees 1-8-0 still remains unrecovered; one case was dismissed (without costs) for want of sufficient evidence to support conviction; and eleven cases were pending; in none of these cases has the Municipality had to pay any Attorney's charge on either side, the Assessor having conducted the prosecution himself; nor has any case of assessment been appealed against under the provisions of Section 83 of the Act. Want of proper machinery for the efficient working of the tax during 1870-71 and 1871-72 has not only helped total evasion on the part of tax-payers, but has also rendered it impracticable for the Department to discover frauds practised by some of them in misrepresenting the descriptions of carriages and animals in their possession, which many a man has been lately found to have done, even amongst the respectable part of the community, for the purpose of avoiding levy of

high rates of the tax. The realization of arrears has involved much labour and an extraordinary quantity of correspondence; but I trust that the present agency, under the close supervision which the Collector is expected to exercise, will work the tax better, and that all defaulters will set a better example to the tax-paying public.

The Assessor lately discovered certain licenses for carriages and animals purporting to bear the Collector's signature and held by tax-payers, payments for which did not appear to have been brought into account. The Clerk in charge of the Registration of, and issue of licenses for, carriages and animals having been suspected of having forged them, information has been laid against him and a Warrant obtained for his apprehension; but he is said to have absconded. It is to this circumstance that the falling off in collection is partly attributable.

FEES ON CARTS AND OTHER WHEELED VEHICLES WITHOUT SPRINGS.—These fees, like the tax on carriages, horses, and other animals, were originally collected by the Wheel-tax Inspectors, formerly working under the Collector; and their collection was, in September 1870, transferred to the Assessment Department, under the operation of Major Bowen's scheme above alluded to. In the collection of these fees, as well as in the settlement of claims, disputes, &c., &c., as to carts seized by this office for want of registration and in other matters relative to the working of this part of the Act, much of the Assessor's own time has been consumed, which, in my opinion, might be turned to better account in connection with the profession tax. For the reasons set forth in that part of this report, which treats of tax on carriages, horses, and other animals, it is proposed to replace the collection of these fees also under the supervision of the Collector. The result of the working of the registration of carts in the Assessment Department during the year under review, notwithstanding the disadvantages the department was labouring under as above mentioned, has been very satisfactory; the sum collected, viz., Rs. 13,004-3-5, as shown by the Statement D given below, being in excess by Rs. 504-3-5 of the budgeted amount, which is Rs. 12,500:—

D.

Statement of Collection of Fees on Registration of Carts and other Vehicles without Springs, and of transfer thereof, during the official year 1871-72, *under Sections* 45—47 *of the Act.*

Period to which the collection relates.	No. of Carts registered.	Amount collected on registration of Carts. RS.	A.	P.	Amount collected on registration of transfer of Carts. RS.	A.	P.	Total. RS.	A.	P.
Payable for half-years ending 30th June and 31st December.										
For the half-year ending 30th June 1870 ...	1	2	0	0	......			2	0	0
Do. 31st Dec. 1870 ...	16	32	0	0	......			32	0	0
Net proceeds of carts seized and sold to meet arrears of fees due thereon for the last-mentioned and previous half-years	17	72	6	1	......			72	6	1
For the half year ending 30th June 1871 ...	1,003	2,006	0	0	7	8	0	2,013	8	0
Net proceeds of carts seized and sold to meet arrears of fees due thereon for the last-mentioned half-year	24	42	5	4	......			42	5	4
For the half-year ending 31st Dec. 1871 ...	3,045	6,090	0	0	15	0	0	6,105	0	0
Do. 30th June 1872 ...	2,365	4,730	0	0	7	0	0	4,737	0	0
Total ...	6,471	12,974	11	5	29	8	0	13,004	3	5

This excess is owing in some measure to the recovery of arrears of former years as detailed in the Statement D; and it will be seen, from the Statement E given below, that the result of this year's operation is an increase in collection of Rs. 906 over that of 1868-69; of Rs. 1,368 over that of 1869-70; of Rs. 1,073 over that of 1870-71; and of Rs. 1,116 over that of the average of the last-mentioned three years; and the number of carts registered is, of course, similarly larger than the numbers of those years respectively:—

E.

Statement of Collection of Fees on Registration of Carts and other Vehicles without Springs, and of transfer thereof during the official year 1871-72, *under Sections* 45—47, *of the Act, as compared with the three years preceding.*

Particulars.	1868-69. No. of Carts.	1868-69. Rs.	1869-70. No. of Carts.	1869-70. Rs.	1870-71. No. of Carts.	1870-71. Rs.	Total of the three years. No. of Carts.	Total of the three years. Rs.	Average of the three years. No. of Carts.	Average of the three years. Rs.
Net collection	6,028	12,098	5,816	11,636	5,944	11,931	17,788	35,665	5,929	11,888
Net collection in 1871-72.	6,471	13,004	6,471	13,004	6,471	13,004	19,413	39,012	6,471	13,004
Increase in 1871-72 ...	443	906	655	1,368	527	1,073	1,625	3,347	542	1,116
Decrease in 1871-72 ...	...	...	...	...	...	...	...	...	...	...

N.B.—The numbers and amounts above set forth indicate the aggregate number of carts registered, and net sums collected during both half-years.

Looking to the frequent transfers of carts from the Town to the Mofussil, any excess beyond 12,000 Rs. a year as the Revenue from that source is unreliable.

TOLLS ON CARRIAGES AND ANIMALS ENTERING THE TOWN.—These were farmed out under the provisions of Sec. 49 of the Act, for Rs. 49,000 for the year, and got in, under the terms of the agreement between the Farmers and this Office, by monthly instalments. The sum secured for the year under review exceeds that for 1868 by Rs. 1,000, that for 1869 by Rs. 7,000, that for 1870 by Rs. 7,000, and the average of these three years by Rs. 5,000, as appears by the Statement F given below :—

F.

Statement of Tolls leased during the official year 1871-72, under Section 49 of the Act, as compared with the three years preceding.

Particulars.	1868.	1869.	1870.	Total of the three years.	Average of the three years.
	RS.	RS.	RS.	RS.	RS.
Farmed for	48,000	42,000	42,000	1,32,000	44,000
Farmed in 1871-72 ...	49,000	49,000	49,000	1,47,000	49,000
Increase in 1871-72 ...	1,000	7,000	7,000	15,000	5,000
Decrease in 1871-72 ...	......	......	......	......	......

TAX ON ARTS, PROFESSIONS, TRADES, AND CALLINGS.—This is the most important, though not the largest in amount, of all the taxes leviable under the Act. The working of it requires efficient agency and supervision and much care and energy. It is to be regretted that a sufficient and efficient agency was not originally employed so as to prevent the accumulation of arrears, for the recovery whereof this office has had and still has to struggle. At the beginning of 1870 the assessment and collection of this tax, which was theretofore attended to partly by the Assessor and partly by the Collector, devolved entirely upon the former, and provision was then made in the Assessment Department for the working of it, including Magisterial proceedings and distraint. Before this scheme was allowed a fair trial and the staff employed on it had sufficient time to bring up the then arrears, the assessment and collection of the Wheel-tax, with all the labour necessarily attendant thereon was, as already mentioned, thrown upon the same staff in September 1870. By reason of this staff not being fully equal to all the duties thus required of it, the former arrears have been greatly added to by subsequent ones. Notwithstanding the difficulties and disadvantages which the Assessor and his department had to encounter, the working of this tax during the year under review is highly satisfactory. By the Statement G given below, it will be observed that a net sum of Rs 89,398-8-0 (which is after deducting refunds) was realized against Rs. 87,500 budgeted : of that sum no less than Rs. 18,277 forms arrears of 1868, 1869, and 1870, for which the budget contemplated only Rupees 3,500, the residue, viz., Rs. 71,121-8-0 being for 1871 and 1872.

G.

Statement of Collection of Tax on Arts, Professions, Trades, and Callings during the official year 1871-72, under Sections 57 and 59—62 of the Act.

Period to which the collection relates.	Amount collected.	
Payable for Calendar years by two half-yearly instalments.	RS.	A.
For the year 1868	3,794	8
Do. 1869	5,656	0
Do. 1870	8,826	8
Do. 1871	58,810	8
Do. 1872	12,311	0
Net Rupees ...	89,398	8

The Comparative Statement given below, marked H, will show that the collection of the year is more by Rs. 14,249 than that of 1868-69, and by Rs. 26,081 than that of 1870-71, but short by Rs. 8,571 of that of 1869-70. The excess in 1869-70 is owing mainly to a sum of upwards of 15,000 Rs. having been brought in for the year 1870 before the expiration of the official year 1869-70, over and above the sum ordinarily collected during the first quarter of the year for the year, which would otherwise come in 1870-71, so that such excess is counterbalanced by the deficit in 1870-71 ; and the result of the year under review is thus better than the average of those three years by upwards of 10,000 Rs.

H.

Statement of Collection of Tax on Arts, Professions, Trades and Callings during the official year 1871-72, under Sections 57 and 59—62 of the Act, as compared with the three years preceding.

Particulars.	1868-69.	1869-70.	1870-71.	Total of the three years.	Average of the three years.
	RS.	RS.	RS.	RS.	RS.
Net collection	75,150	97,970	63,318	2,36,438	78,813
Net collection in 1871-72	89,399	89,399	89,399	2,68,197	89,399
Increase in 1871-72 ...	14,249	...	26,081	40,330	13,443
Decrease in 1871-72 ...	...	8,571	...	8,571	2,857

It will be observed from the Statement I. given below, that the number of companies and persons registered in the various classes created by the Act is 5,658 during 1868-69; 5,123 during 1869-70; and 4,737 during 1870-71, showing a rapid annual decline and making an average of 5,173 persons per year; and that the number registered in the year under review is 6,889, which is greater than that of 1868-69 by 1,231, of 1869-70 by 1,766, of 1870-71 by 2,152, and of the average of the three years by 1,716 :—

I.

Statement of Joint Stock Companies and Persons registered during the official year 1871-72, under Sections 57 and 59—62 of the Act, as compared with those registered during the three years preceding.

Period.	Under Schedule C to the Act annexed.								Total.
	Class 1. A.	Class 1. B.	Class 1. C.	Class II.	Class III.	Class IV.	Class V.	Class VI.	
Number registered during 1868-69 for Calendar years 1868 and 1869 in the... ....1st Division...	......	......	......	......	7	8	47	410	472
2nd do. ...	......	......	......	56	74	127	300	905	1,462
3rd do. ...	2	......	3	83	123	104	308	658	1,281
4th do. ...	......	......	......	2	7	10	37	283	339
5th do. ...	......	......	......	57	23	19	71	229	399
6th do. ...	......	......	......	6	26	14	40	252	338
7th do. ...	......	......	......	29	46	28	127	665	895
8th do. ...	......	......	3	13	14	2	41	399	472
Total ...	2	......	6	246	320	312	971	3,801	5,658
Do. during 1869-70 for Calendar years 1868, 1869, and 1870 in the..............1st Division...	2	......	3	3	9	3	70	390	480
2nd do. ...	......	......	......	69	113	170	381	714	1,447
3rd do. ...	14	3	13	150	204	160	292	539	1,375
4th do. ...	......	......	......	3	4	7	41	180	235
5th do. ...	......	......	5	27	62	12	63	134	301
6th do. ...	......	......	6	18	41	12	38	136	251
7th do. ...	......	......	6	24	64	43	105	465	707
8th do. ...	......	......	7	29	17	1	38	240	327
Total ...	16	3	38	323	514	408	1,028	2,798	5,123
Do. during 1870-71 for Calendar years 1868, 1869, 1870, and 1871 in the ...1st Division...	1	......	1	2	2	10	50	390	456
2nd do. ...	......	......	......	33	47	105	255	612	1,052
3rd do. ...	5	1	7	52	102	118	271	820	1,376
4th do. ...	......	......	......	1	7	12	51	261	332
5th do. ...	......	......	1	19	32	6	71	164	293
6th do. ...	......	......	2	30	49	14	19	114	228
7th do. ...	......	......	2	20	42	32	92	442	630
8th do. ...	......	......	3	15	23	2	28	299	370
Total ...	6	1	16	172	304	299	837	3,102	4,737
Total of the 3 years above given.	24	4	60	741	1,138	1,019	2,831	9,701	15,518
Average of the above 3 years.	8	1	20	247	379	340	944	3,234	5,173
Do. during 1871-72 for Calendar years 1868, 1869, 1870, 1871, & 1872 in the...1st Division ...	......	......	1	5	9	34	67	589	705
2nd do. ...	......	......	......	29	79	252	362	926	1,648
3rd do. ...	9	1	19	102	115	146	378	1,088	1,858
4th do. ...	......	......	......	5	8	4	21	207	245
5th do. ...	......	......	4	19	59	16	118	626	837
6th do. ...	......	......	4	43	53	23	59	97	279
7th do. ...	......	......	3	22	29	21	126	666	867
8th do. ...	......	......	5	22	24	......	28	366	450
Total ...	9	1	36	247	376	496	1,159	4,565	6,889
Increase in 1871-72 ...	1	......	16	......	......	156	215	1,331	1,719
Decrease in 1871-72 ...	......	......	......	......	3	......	......	......	3

N.B.—The figures above given include cases in which refunds have been made.

I feel sanguine that, had it not been for the saddling of the Assessment Department with the collection of the Wheel-tax, the result of its operations as regards Trade-tax would be still better and a much greater portion, if not the whole, of the arrears of past years, which the Department has yet to deal with, would have been wiped off. I need hardly add that the recovery of arrears has involved voluminous correspondence, and discussion of innumerable questions arising out of the operation of the Act, in the disposal whereof the Assessor has afforded valuable aid. In the course of the realisation of this tax, 2,173 Prosecutions were instituted in the Police Courts, 1,919 of them were withdrawn on parties entering into compromise before trial and judgment; 32 were heard and adjudicated upon by the Magistrates, resulting in the infliction (irrespective of tax) of penalties amounting in the aggregate to Rupees 236-8-0, whereof Rupees 229-8-0 only has been recovered; 5 were dismissed chiefly for want of sufficient evidence to support conviction; 1 case is lying over for reference to the Judges of the High Court for their opinion upon certain technical points raised on behalf of one of the Officers of Her Majesty's 45th Regiment of Foot, and the remaining 216 cases are still pending for want of appearance of the parties sued, who are either hiding or are absent from Madras. In three of the cases withdrawn, the prosecution was defended by Attorneys employed for the purpose; and on the Assessor, who appeared for the prosecution in all the Magisterial proceedings (excepting in the cases of two of the Officers of Her Majesty's 45th Regiment of Foot, where the questions involved rendered the engagement of an Attorney and Counsel at a cost of Rs. 190-8-0 necessary) maintaining the charge, the defence was abandoned and compromise ensued. Of the cases tried and adjudicated upon, two were most strenuously opposed on behalf of the defence by an Attorney and a Vakeel employed for the purpose, with success, however, for the prosecution,—one of the cases dismissed was dismissed with costs, upon pressure by the Vakeel for the defence, for want of readiness on behalf of the prosecution to proceed: but such costs were afterwards recouped by an arrangement which the defendant in that matter subsequently entered into for payment of the tax due from him. The other dismissed cases were defended personally by the parties, so that their dismissal did not entail any loss on the Municipality beyond the costs of Summons—which are 8 Annas in each case. Looking to the labour and trouble involved in the getting up of evidence to substantiate the charge in each case, the result on the whole is most satisfactory. The appeals preferred against assessment under Section 59 were comparatively few, whilst there was none under Section 83 of the Act. There were but two sittings under Section 59 (one on the 13th and another on the 15th September 1871), at which some of them were disposed of. The other appeals are lying over for consideration during the present year's Sessions. During the investigation of the charges before the Magistrates, and the adjudication of Appeals before the President and Commissioners, various technical questions arising out of the operation of, and ambiguities and defects in, the Act were from time to time raised, on which the Municipality was compelled at no small expense to seek for professional advice. Such ambiguities and defects in the Act make a thorough and speedy revision of the Act all important, especially as the difficulties in the way of recovering the tax are daily increasing on such technical grounds.

TAX ON LIQUOR LICENSES.—The revenue from this source is entirely dependent on the exercise of the Collector of Madras' discretion in the grant of licenses for the retail sale of spirituous and intoxicating liquors within the Town. Its assessment and collection, not unlike the other taxes, devolved upon the Assessor. The number of licenses so granted by the Collector of Madras is generally about 500 annually; and in the year under review the number was 479, or thereabouts, made up of 50 for Colombo Arrack, 55 for Puttai Arrack, 299 for Tody, and 75 for Beer and Wine. Only 18 of the persons liable for this tax paid it without compulsory measures, whilst all the others, with the exception of a small number in cases of shops shut, had to be prosecuted as in previous years. The net sum collected under this head (after deducting refunds) is, as shown by the Appendix J, Rs. 11,797, which includes arrears of 1869 and 1870, to the extent of Rs. 738, against Rs. 10,000 budgeted.

J.

Statement of Collection of Tax on Liquor Licenses during the official year 1871-72, *under Sections* 58 *to* 62 *of the Act.*

Period to which the collection relates.	Amount collected. RS.	A.
Payable for Calendar years at once—		
For the year 1869	12	0
Do. 1870	726	0
Do. 1871	9,956	0
Do. 1872	1,103	0
Net Rupees ...	11,797	0

The Statement K given below, exhibiting as it does, a comparison between the year under review and the three years preceding it, shows the collection of the present year to be less than that of 1868-69 by Rs. 2,795, and more than that of 1869-70 by Rs. 2,170, and of 1870-71 by Rs. 3,526, and of the average of those three years by Rs. 967 :—

K.

Statement of collection of Tax on Liquor Licenses during the official year 1871-72, under Sections 58 to 62 of the Act, as compared with the three years preceding.

Particulars.	1868-69.	1869-70.	1870-71.	Total of the three years.	Average of the three years.
	RS.	RS.	RS.	RS.	RS.
Net collection	14,592	9,627	8,271	32,490	10,830
Net collection in 1871-72	11,797	11,797	11,797	35,391	11,797
Increase in 1871-72 ...	....	2,170	3,526	5,696	1,899
Decrease in 1871-72 ...	2,795	....	....	2,795	932

I likewise append Statement L, from which it will be observed that the number of shops of all kinds and classes registered during 1868-69 was 543, during 1869-70, 422, and during 1870-71, 344, showing an annual decline and making an average of 436 per annum; the number registered during the year under review being 474, which, though less by 69 than 1868-69, is more by 52 than 1869-70, by 130 than 1870-71, and by 38 than the average of the three years.

L.

Statement of Shops used for the retail sale of Spirituous or Intoxicating Liquors registered during the official year 1871-72, under Sections 58 to 62 of the Act, as compared with those registered during the three years preceding.

Period.	Under Schedule C. II. to the Act annexed.				
	Class I.	Class II.	Class III.	Class IV.	Total.
Number registered during 1868-69 for Calendar years 1868 and 1869 in the 1st Division	3	4	23	68	98
2nd do.	13	34	14	12	73
3rd do.	16	40	17	19	92
4th do.	2	2	24	44	72
5th do.	4	7	8	23	42
6th do.	1	6	6	28	41
7th do.	3	10	12	41	66
8th do.	2	1	...	56	59
Total ...	44	104	104	291	543
Do. during 1869-70 for Calendar years 1868, 1869, and 1870 in the 1st Division	2	...	17	67	86
2nd do.	9	17	4	12	42
3rd do.	6	17	9	25	57
4th do.	2	1	13	37	53
5th do.	2	3	11	17	33
6th do.	3	8	7	21	39
7th do.	...	6	9	35	50
8th do.	3	...	...	59	62
Total ...	27	52	70	273	422
Do. during 1870-71 for Calendar years 1869, 1870, and 1871 in the 1st Division	2	...	16	45	63
2nd do.	2	16	1	11	30
3rd do.	10	24	9	13	56
4th do.	...	2	14	39	55
5th do.	3	5	10	15	33
6th do.	...	1	5	12	18
7th do.	1	9	5	27	42
8th do.	1	...	...	46	47
Total ...	19	57	60	208	344
Total of the three years above given ...	90	213	234	772	1,309
Average of the above three years ...	30	71	78	257	436

Statement of Shops used for the retail sale of Spirituous or Intoxicating Liquors, &c.—(Concluded.)

Period.	Under Schedule C. II. to the Act annexed.				
	Class I.	Class II.	Class III.	Class IV.	Total.
Number regisred during 1871-72 for Calendar years 1869, 1870, 1871, and 1872 in the 1st Division	2	...	13	59	74
2nd do.	13	21	8	18	60
3rd do.	12	27	9	25	73
4th do.	...	2	5	15	22
5th do.	5	8	22	40	75
6th do.	...	3	9	20	32
7th do.	2	14	14	41	71
8th do.	2	...	1	64	67
Total ...	36	75	81	282	474
Increase in 1871-72 ...	6	4	3	25	38
Decrease in 1871-72 ...	...	...	...	...	...

N.B.—The figures above given include cases in which refunds have been made.

The year 1868-69 was exceptional in the fear created in that year, as the first year of the operation of the present Act, amongst this particular class of traders of the heavy penalties imposed thereby. Since then, however, these traders, especially the Toddy Shop-keepers, have been prompted to various means of evading payment with impunity. In generality of these cases, the only things available for distraint within the Municipal jurisdiction are the stock of Toddy to be found in the shops, the seizure of which, in consideration of the provisions of the Act requiring a lapse of seven days between distress and sale, it is futile to attempt. Several of these persons reside beyond the Municipal limits, which circumstance affords very great facilities for evading even service of Magisterial processes. Others, in whose names the Collector of Madras issued licenses, were ascertained to be mere coolies having no position to be affected by any coercive measures, howsoever extreme in their nature. In one case, where the Magistrate's award was Rupees 25-8-0, the distraint realized after expenses but 9 pice. In the face of the several disadvantages above set forth, the exertions of the Assessment Department have proved so far successful as to exhibit more satisfactory results than the working of the two previous years. There are still about 500 Rupees worth of arrears for 1870, and about 800 Rupees of 1871, due to the Municipality, the recovery whereof has been found difficult for one or other of the causes above given. It is in consequence of the distraint system of recovery having been found thus practically valueless, that the Department was obliged to have recourse to Magisterial proceedings for the purpose of enforcing registration in almost every case. In these cases also, as in the cases of Trade-tax, the Assessor had to contend with technical objections raised under the Act in the course of the prosecutions conducted by him. 482 prosecutions were instituted, of which 418 were withdrawn on compromise, 20 were tried and adjudicated upon by the Magistrates, resulting in conviction and infliction of penalties amounting together to Rupees 86, whereof Rupees 49 remains still unrecovered; 1 case was dismissed upon a technical question raised by the Magistrates; and 43 cases were pending. To ensure the full realization of this part of the revenue, my predecessor suggested to the Collector of Madras the expediency of his withholding the grant of his licenses at the beginning of the Fusly year, except on production of the Municipal Licenses for the year preceding; but that officer declined to adopt such suggestion. I trust that Government will take the matter into serious consideration, and see fit to issue orders for the carrying out of the plan proposed. By this plan, the Collector of Madras may be able to secure better persons than are now borne on his Register, many of whom, as I am informed, are mere coolies working under Tradesmen beneficially interested in the shops.

Rates on Houses, Buildings, and Lands.—This part of the Municipal Revenue is the largest in amount of all the taxes levied under the Act. Its assessment and all proceedings incidental thereto and up to final settlement or confirmation thereof, are conducted in the Assessment Department, and

prevision is made in the Collector's Department for the realization thereof. I append (marked M) a divisional abstract of the Assessment made for the year under review.

M.

Abstract showing the Assessment of Valuation and Rates on Houses, Buildings, and Lands for the Calendar year 1871, *under Sections* 69, 70, *and* 72—82 *of the Act.*

Division.	Number of Premises not liable to rate and therefore not Assessed.	Number of ratable Houses, Buildings, and Lands.	Original Assessment of ratable Houses, &c.		Number of Appeals preferred against such Assessment.	Number of such Appeals admitted and heard.	Reduction allowed on disposal of Appeals heard.		Net Assessment after allowing such reduction.	
			Valuation.	Rate at 7½ per cent.			Valuation.	Rate at 7½ per cent.	Valuation.	Rate at 7½ per cent.
			RS. A.	RS. A. P.			RS. A.	RS. A. P.	RS. A.	RS. A. P.
1	605	3,378	3,08,842 4	23,163 12 1	108	72	2,679 0	200 15 1	3,06,163 4	22,962 13 0
2	417	6,779	6,30,044 8	47,253 5 5	667	493	9,259 8	694 7 1	6,20,785 0	46,558 14 4
3	254	5,515	8,65,154 8	64,886 9 9	70	44	2,392 8	179 6 9	8,62,762 0	64,707 3 0
4	260	538	63,790 8	4,784 3 0	14	9	1,038 0	77 13 6	62,752 8	4,706 10 6
5	878	4,778	4,75,656 0	35,674 14 6	62	30	580 12	43 9 0	4,75,075 4	35,631 5 6
6	199	1,122	3,02,023 0	22,652 0 7	21	6	81 0	6 1 3	3,01,942 0	22,645 15 4
7	900	5,861	4,36,474 0	32,736 5 4	90	41	972 8	72 14 11	4,35,501 8	32,663 6 5
8	961	3,456	2,93,899 8	22,042 13 5	68	31	2,559 0	191 14 9	2,91,340 8	21,850 14 3
	4,472	31,427	33,75,884 4	2,53,194 5 1	1,100	728	19,562 4	1,467 2 4	33,56,322 0	2,51,727 2 9

It will be observed therefrom that the Municipality, divided into 8 parts, consists of 31,427 ratable Houses, Buildings, &c., and 4,472 premises of various descriptions not liable to rate; that the ratable property was valued at Rupees 33,75,884-4-0 and rated at Rupees 2,53,194-5-1; that in the disposal of Appeals received against such valuation and rate (which were to the extent of 1,100 in number, the number admitted and heard being 728), the said valuation and rate were reduced by Rupees 19,562-4-0 and Rupees 1,467-2-4, respectively, and that the net sum of Rupees 2,51,727-2-9 being the equivalent at 7½ per cent. of Rupees 33,56,322 (the same being the difference between the original valuation of Rupees 33,75,884-4-0 and the reduction of Rupees 19,562-4-0 above mentioned) forms the current demand of the year under review. The assessment in and prior to 1870 was revised annually, special regard being had, as far as possible, to new and improved buildings, augmentation in produce, dilapidation, and the like; but the process for the year under review involved an extraordinary quantity of labour (for which the Assessment Department, as at present constituted, and with the other duties which are attached to it, and which it has to perform, is not equal in point of strength, and hence the delay in the making up of the Registers), in that the valuation of each and every number comprised in the 1st and 2nd Divisions (consisting of upwards of 10,000 houses, &c.) was revised in pursuance of a resolution of the Commissioners passed in 1869, with special reference to locality, extent, holding, occupation, rent, and the like, causing as such, a measure necessarily did, a variation from the assessment of the previous year, in about 4,600 cases and all the various proceedings required by the Act in that behalf—such as notices of increase, appeals, sittings, &c., &c., consequent on such variation. The appeals preferred against such variation were 775, of which not more than 564 were admitted and heard. This general revision of the 1st and 2nd Divisions was commenced in April 1870 and was not over before February 1871, conducted as it was by the Assessor himself upon personal inspection. The remainder of the year and by far the greater portion of the current year have been consumed in the disposal of those Appeals, in procuring information as to names of owners and description of property comprised in all the divisions, in completion of the Registers as far as practicable with such information, and in the ordinary revision of the Assessment for the current year. Subject to such revision as the Appeals might involve, the Assessment Registers for the year under review were ready and transmitted to the Collector by the instalments and on the dates following (that is to say), those of the 3rd, 4th, and 6th Divisions on the 19th, and those of the 5th and 8th Divisions on the 20th of December 1870, those of the 7th Division on the 5th of January 1871, those of the 1st Division on the 14th idem, and those of the 2nd Division on the 7th of August 1871. There were no less than 22 sittings of the Commissioners for the hearing and disposal of Appeals which took place on the following dates, viz. :—

On the 19th and 20th May 1871, for the 1st Division.
Do. 1st of August ,, for the 3rd, 4th, 5th, and 6th Divisions.
Do. 3rd do. ,, for the 3rd Division.
Do. 4th do. ,, for the 7th and 8th Divisions, and on the 15th, 19th, and 20th of September, 4th, 6th, 9th, 12th, 16th, 18th, 20th, 25th, 27th, and 30th of October, and 3rd, 4th, 6th, and 8th of November 1871 for the 2nd Division. The result of the hearing was that in 213 cases the original assessment was confirmed, and in the remaining 599 cases, reduction allowed. I append a Statement marked N, showing the number of ratable and non-ratable buildings, &c., which the Assessment Registers for 1868, 1869, and 1870 respectively comprised, and the net value of the ratable buildings and the rated demand for those years, and drawing a comparison of the year under review with those three years, also exhibiting an increase in the demand for 1871, over that of 1868, of Rupees 13,331-3-3, that of 1869, of Rupees 8,197-1-11, and that of 1870, of Rupees 5,478-2-4.

N.

Statement of Assessment of Valuation and Rates on Houses, Buildings, and Lands for the Calendar year 1871, *under Sections* 69, 70, *and* 72—82 *of the Act, as compared with the Assessment of the three years preceding.*

Divisions.	No. of Premises not liable to rates and therefore not assessed.	Net Assessment for 1868.			No. of Premises not liable to rates and therefore not assessed.	Net Assessment for 1869.			No. of Premises not liable to rates and therefore not assessed.	Net Assessment for 1870.		
		No. of rentable Houses, Buildings, & Lands.	Valuation.	Rate at 7½ per cent.		No. of rentable Houses, Buildings, & Lands.	Valuation.	Rate at 7½ per cent.		No. of rentable Houses, Buildings, & Lands.	Valuation.	Rate at 7½ per cent.
			RS. A. P.	RS. A. P.			RS. A. P.	RS. A. P.			RS. A. P.	RS. A. P.
1	......	......	2,66,741 0 0	20,006 8 4	......	......	2,91,909 4 0	21,893 10 3	......	......	2,93,620 8 0	22,021 15 9
2	......	......	5,73,520 12 0	43,013 12 1	......	......	5,89,621 4 0	44,222 4 11	......	......	5,90,507 12 0	44,287 14 7
3	......	......	8,31,448 0 0	62,358 15 3	......	......	8,43,225 8 0	63,241 13 2	......	......	8,47,064 12 0	63,529 11 10
4	......	......	2,37,596 4 0	17,820 8 8	......	......	2,48,888 0 0	18,667 7 5	......	......	2,52,636 0 0	18,948 5 10
5	......	......	3,55,762 8 0	26,682 9 8	......	......	3,60,405 4 0	27,030 12 9	......	......	3,69,144 0 0	27,686 2 5
6	......	......	2,85,474 12 0	21,410 9 6	......	......	2,89,060 0 0	21,679 9 5	......	......	2,92,145 12 0	21,911 0 11
7	......	......	3,31,502 4 0	24,863 5 9	......	......	3,32,825 12 0	24,962 2 11	......	......	3,47,297 12 0	26,047 15 10
8	......	......	2,96,524 8 0	22,239 7 6	......	......	2,91,088 0 0	21,832 1 3	......	......	2,90,870 4 0	21,815 10 6
Total...	5,496	31,265	31,78,576 0 0	2,38,395 12 9	5,358	31,364	32,47,023 0 0	2,43,529 14 1	5,499	31,350	32,83,286 12 0	2,46,248 13 8
Net Assessts. for 1871.	4,472	31,427	33,56,322 0 0	2,51,727 0 0	4,472	31,427	33,56,322 0 0	2,51,727 0 0	4,472	31,427	33,56,322 0 0	2,51,727 0 0
Increase in 1871.	......	162	1,77,746 0 0	13,331 8 3	......	63	1,09,299 0 0	197 1 11	......	77	73,035 4 0	5,478 2 4
Decrease in 1871.	1,024	......	....	....	886	......	....	....	1,027	......	....	....

The following Table marked O, containing the demand from this source from 1866 to 1870 (both years inclusive), will show a gradual and steady rise in the Revenue caused by the ordinary revision, and that without involving any portion of the trouble which a general revision imposes :—

O.

1866.	1867.	1868.	1869.	1870.
RS. 2,34,000	RS. 2,36,000	RS. 2,39,000	RS. 2,44,000	RS. 2,46,000

Upon the statistics above given, it becomes important to consider, looking to the fact of the ordinary annual revision being comprehensive enough to include all such increases in assessment as are warranted by new buildings, improvement of old buildings, augmentation of produce, and the like, from time to time coming within the observation and knowledge of the Assessment Department, and to the circumstance of ample facilities being afforded by the Act for reduction, cause being shown by parties wishing it, and bearing in mind the insignificant return had by the laborious general revision as compared with the results of the ordinary revision during the previous years, whether it is not desirable to discontinue the general revision, and thereby save ourselves the expense which the continuance of such a measure involves, and prevent outcry and annoyance on the part of rate-payers.

At the beginning of the official year under review, there were outstanding arrears of former years to the extent of Rupees 12,976-6-9, which, plus the demand for the year as shown by Abstract M, makes an aggregate demand of Rupees 2,57,503-2-5,* towards which a sum of Rupees 2,39,642-7-4 (netting Rupees 2,39,513-8-3 after deducting refunds) has been realized against an estimate of Rupees 2,47,000. The following Statement, marked P, will also show how the last year's collection stands as regards the collections of the three previous years.

* Rs. 7,264-5-4 is not included in these figures, as that amount, which form part of the demand of the Calendar year 1871, was collected during the official year 1870-71.

P.

——	Collected in 1868-69.	Collected in 1869-70.	Collected in 1870-71.	Total of the three years.	Average of the three years.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
	2,51,431 14 8	2,40,307 5 4	2,67,042 0 9	7,58,781 4 9	2,52,927 1 7
Collected in 1871-72	2,39,642 7 4	2,39,642 7 4	2,39,642 7 4	7,18,927 6 0	2,39,642 7 4
Increase ...	....	....	....	....	....
Decrease ...	11,789 7 4	664 14 0	27,399 9 5	39,853 14 9	13,284 10 3

The Bills relating to the current demand commenced to be issued on the following dates :—

1st Division...	...	27th February 1871.
2nd do. ...	...	7th August „
3rd do. ...	...	1st March „
4th do. ...	...	4th do. „
5th do. ...	...	8th do. „
6th do. ...	...	8th do. „
7th do. ...	...	15th do. „
8th do. ...	...	6th do. „

the lateness in the issue of Bills for the 2nd Division was owing to the delay which the general revision caused in the preparation of the Registers for that Division.

The remissions granted during 1868-69 to 1871-72 are as follow, viz. :—

1868-69.	1869-70.	1870-71.	1871-72.
RS. A. P. 7,205 8 1	RS. A. P. 5,051 1 6	RS. A. P. 6,621 8 5	RS. A. P. 7,048 7 3

and the balances of demand outstanding at the close of three years are as under :—

1868-69.	1869-70.	1870-71.	1871-72.
RS. A. P. 34,921 2 7	RS. A. P. 33,098 10 2	RS. A. P. 12,976 6 9	RS. A. P. 10,812 3 10

The collection, though short of the Budget-Estimate by about 7,000 Rupees, is on the whole fair. The number of bills collected during the year under review is 30,760, of which 19,330 were discharged upon presentation thereof. In 11,430 cases, notices of demand had to be issued, and in 4,599 of such Warrants were issued, and of this last mentioned number 3,046 were executed by the distraint branch of the Collector's Department, and 1,553 remained unexecuted at the end of the year. The Appendix D will show the demand, collection, remission, and balance of this tax divisionally.

The following is an Abstract of the Receipts during the year, after setting off such items as have been otherwise adjusted, viz. :—

No.	Particulars	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
1.	Rates on Houses, Buildings, and Lands ...	2,39,642	7	4						
	Less Refund	128	15	1						
					2,39,513	8	3			
2.	Ground Rents	...	...		1,908	2	8			
3.	Tax on Arts, Trades, Professions, and Callings	90,246	0	0						
	Less Refund	847	0	0						
					89,399	0	0			
4.	Tax on Liquor License	11,722	0	0						
	Less Refund	37	0	0						
					11,685	0	0			
5.	Tax on Carriages, Horses, and other Animals	37,738	8	0						
	Less Refund	92	0	0						
					37,646	8	0			
6.	Registration of Carts and other Vehicles without springs	...	...		13,049	12	2			
7.	Tolls on Carriages and Animals entering the Town	48,133	5	4						
	Less Charges	73	13	2						
					48,059	8	2			
8.	Miscellaneous...	81,667	11	6						
	Less Refund and Charges	1,256	14	10						
					80,410	12	8			
9.	Sale of Government Paper	...	...		36,370	2	4			
								5,58,042	6	3
10.	Liabilities—									
	Composition for Tolls				43	8	0			
	Income-tax...				139	4	0			
								182	12	0
11.	Advances recovered							94,814	3	2
12.	Balance on 31st March 1871							9,144	11	7
	Making an aggregate of...							6,62,184	1	0

Abstract of Disbursements.

And the following is an Abstract of the Disbursements made up in a similar manner, viz. :—

CHARGES.

No.	Particulars	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
1.	Salaries				56,620	0	0						
	Less proportion of Executive Engineer's salary debited to Water-Works Project... ...				4,333	5	4						
								52,286	10	8			
2.	Establishments				...	...		1,67,231	4	2			
3.	Conservancy (other than Establishment) ...				...	...		21,268	7	3			
4.	*Public Works.*												
	New Buildings				6,723	5	3						
	Communications and Improvements...	46,718	9	6									
	Less proceeds of sale of Materials, &c.	1,593	6	3									
					45,125	3	3						
								51,848	8	6			
5.	Repairs—												
	Buildings				4,592	11	1						
	Communications				81,647	6	5						
	Miscellaneous				7,175	0	2						
								93,415	1	8			
6.	Hospitals, Dispensaries, and Vaccination							31,417	8	0			
7.	Contribution on account of Police and Contagious Diseases Act...							27,676	0	0			
8.	Lighting							21,849	1	8			
9.	Interest on Loan on Water Works				26,913	5	3						
	Sinking Fund for the Liquidation of Water-Works Loan				13,456	10	7						
								40,369	15	10			
10.	Census							17,657	6	10			
11.	Educational Grants							2,840	12	0			
12.	Miscellaneous							31,087	6	9			
								5,58,948	3	4			
13	Advances recoverable							95,163	9	6			
											6,54,111	12	10
	Balance in hand on 31st March 1872										8,072	4	2

The following is the Balance
March 1872, viz. :—

The Municipal Fund of Madras
Contribution from Governmen
Lines of Perambore ...
Sums Payable... ... ...

Cash in Bank of Madras ...
Office Premises ... ...
Standing Advances ... ...
Advances recoverable ...
Sinking Fund for the Liquidat

CONCLUSION.—I assumed charge
treated in this report refer to a pe
Colonel Charles Denison, who is in
Government, but its preparation h
knowledge of the details of such a
impossible.

I cannot, of course, speak from
period comprized in this report, b
generally have rendered good and
them, deserve special mention. M
reputation he has gained in the Mu
department, but has always been re
disposal. I have also received ver
into this Town, and in the preparati
sawmy Chetty, the Assessor, is the
of possessing a fair legal knowled
valuable; he has conducted his duti
several arrears of taxes which had

I do not knew whether it is
before Government in a different f
Denison, and I have no other mean
Executive duties of this Office in 186
ledge of the work to be done on j
influx of work, consequent on the
found it perfectly impossible to kee

RECEIPTS.	Budget Estimates for 1871.
RATES ON HOUSES, BUILDINGS, & LANDS.	RS.
Arrears ... ... / Current	....
GROUND RENTS	....
TAX ON ARTS, TRADES, PROFESSIONS, AND CALLINGS.	
Arrears for 1868 ... ... / Do. 1869 ... ... / Do. 1870 ... ... / Current	....
LIQUOR LICENSE TAX.	
Arrears for 1868 ... ... / Do. 1869 ... ... / Do. 1870 ... ... / Current	....
TAX ON CARRIAGES, HORSES, AND OTHER ANIMALS.	
Arrears ... ... / Current ... ... / Prospective	....
REGISTRATION OF CARTS AND OTHER VEHICLES WITHOUT SPRINGS.	
Arrears ... ... / Current ... ... / Prospective ... ... / Registration of Transfer ...	....
TOLLS ON CARRIAGES AND ANIMALS ENTERING THE TOWN.	
Farm	....
Composition	....
MISCELLANEOUS.	
Government Contribution towards maintenance of roads	35,000
Rent of Market Stalls ...	7,000
Fees for Slaughter Houses ...	5,500
Strand Rents	500
Fees for Licenses for Dangerous and Offensive Trades.	
Permanent... ... / Temporary... ..	5,000
Proceeds of Sale of Rubbish ...	1,600
PEOPLE'S PARK. Proceeds of Sale of Hay ...	4,500
PEOPLE'S PARK. Govt. Grant for Zoological Collections	8,960
PEOPLE'S PARK. Tiger Collections	1,400
PEOPLE'S PARK. Miscellaneous	140
Grazing and Avenues ...	3,500
Sewage Farm	1,500
Demand and Warrant Fees ...	1,500
Fines, Police	1,000
Do. on Contractors ...	500
Do. on Departments ...	8,600
Interest on Govt. Securities ...	1,200
Sale Proceeds of Lands, &c. ...	12,800
Do. of old Stores... ...	200
Other Items	1,000
Reserve for unpaid Bills ...	....
Contribution from Govt. for Conservancy of Left Wing Lines of Perambore	....
Fencing Cooum River	....
Forming Napier Park behind Burghall's Stables	....
Improving Andiappah Naick Streets ...	....
Widening Pursewaukum High Road ...	....

Accountable to Government.
Recoveries for breakages of glass panes, &c.

MUNICIPALITY

No. 1.—STATEMENT of Receipts and Disbursements

Total of Budget Estimates under Major Heads.	Receipts from 1st January to 28th February 1871.	Receipts in March 1871.	Total Receipts.	Total Receipts under Major Heads.	REMARKS.
RS.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
2,73,000	15,951 2 8	5,919 2 9	21,870 5 5		
	....	7,264 5 4	7,264 5 4	29,134 10 9	
6,000	1,414 10 10	209 0 2	1,623 11 0	1,623 11 0	
	332 0 0	56 0 0	388 0 0		
	894 0 0	373 8 0	1,267 8 0		
94,000	3,171 8 0	1,784 8 0	4,956 0 0		
	11,605 8 0	4,917 8 0	16,523 0 0	23,134 8 0	
	....	....	....		
11,700	....	....	....		
	219 0 0	111 0 0	330 0 0		
	375 0 0	149 0 0	524 0 0	854 0 0	
	229 8 0	111 8 0	341 0 0		
51,000	6,472 4 0	2,192 4 0	8,664 8 0		
	....	....	....	9,005 8 0	
	32 0 0	18 0 0	50 0 0		
12,500	2,740 0 0	890 0 0	3,630 0 0		
	....	....	....		
	7 12 0	4 8 0	12 4 0	3,692 4 0	
49,000	4,083 5 4	4,083 5 4	8,166 10 8	8,166 10 8	
....	114 8 0	60 0 0	174 8 0	174 8 0	Accountable to the Farmers of Tolls.
....	....	....	....		
....	1,368 1 8	624 10 6	1,992 12 2		
....	1,099 8 3	464 5 6	1,563 13 9		
....	163 4 9	....	163 4 9		
....	1,534 4 0	483 12 5	2,018 0 5	2,341 2 4	
	305 1 11	18 0 0	323 1 11		
....	713 12 0	224 6 0	938 2 0		
	449 4 3	403 6 3	852 10 6		
10,000	....	....	....	1,416 8 4	
	354 4 6	120 10 6	474 15 0		
	49 14 7	39 0 0	88 14 7		
....	277 11 11	674 13 6	952 9 5		
....	150 2 3	166 10 2	316 12 5		
....	829 2 0	406 1 1	1,235 3 1		
....	36 0 0	....	36 0 0		
....	60 0 0	49 14 0	109 14 0		
....	349 8 8	176 1 6	525 10 2		
....	746 0 0	....	746 0 0		
....	283 11 2	....	283 11 2		
....	....	....	....		
....	296 8 3	62 1 10	358 10 1		
91,490				12,980 1 5	
25,000	....	....	....		
....	444 0 0	....	*a* 444 0 0	444 0 0	
....	135 12 5	....	*b* 135 12 5		
....	133 8 0	10 0 0	*c* 143 8 0	561 0 2	
....	278 13 3	....	*d* 278 13 3		
....	7 14 6	....	*d* 7 14 6	... ...	

a Estimated cost of work for conveying the sewage of the Left Wing Lines of Perambore.

b This item represents the sale proceeds of materials.

c Realized by sale of hay, &c., &c., to be set off against expenditure under this head.

d Sale proceeds of land and building materials, &c., to be set off against expenditure.

e Costs recovered and to be set off against expenditure.

OF MADRAS

from 1st January to 31st Ma

DISBURSEMENTS.	
OFFICE.	
Salaries	
Establishment.	
General Department	
Collector's Department	
Miscellaneous :—	
Extra Writers	
Commission	
Extra Coolies	
Ground Rents Establishments .	
Assessor's Department	
Miscellaneous :—	
Extra Writers	
Commissioners' Fees ...	
Executive Engineer's Department.	
In-door	
Out-door	
Conservancy Department.	
In-door	
Out-door	
Conservancy.	
Repair of Carts	
Repairs—Boats	
Main Drain	
Digging Rubish Pits ...	
Killing Dogs	
Sanding Latrines	
Stores	
Epidemic Charges ...	

RECEIPTS.	Budget Estimates for 1871.	To B Est
	RS.	
Brought forward...	....	6,

MUNICIPALITY

STATEMENT of Receipts and Disbursements

Total of Budget Estimates under Major Heads.	Receipts from 1st January to 28th February 1871.	Receipts in March 1871.	Total Receipts.	Total Receipts under Major Heads.	REMARKS.
RS.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
5,13,600	75,103 12 2	34,403 12 1	....	1,09,507 8 3	

OF MADRAS.

from 1st January to 31st March 1[illegible]

DISBURSEMENTS.	Bud Grant 187[illegible]
Brought forward...	29[illegible]
PUBLIC WORKS.	
New—Improvements.	
Forming Napier Park behind Burghall's Stables	[illegible]
Sewage Farm extension	[illegible]
Improvement and extension of Burial and Burning grounds	[illegible]
Removal of Houses in Vepery High Road	1[illegible]
Emergent Reserve	[illegible]
Constructing Cart Stands	[illegible]
Erection of Model Parcherries ...	[illegible]
Drains.	
Constructing New Drains	[illegible]
Completing Screw Pile Drain at North-East angle of the Fort	
Supplying Cast-Iron Cesspool Grates in place of Wooden ones	
Repairs—Buildings.	
Repairing Slaughter Houses ...	
Do. General Market	
Do. Latrines	
Do. Cart Sheds	
Do. Office Premises	
Do. Public Wells	
Do. Dust Bins	
Do. Walls on road sides ...	
Do. Toll Gates	
Repairs—Roads.	
Maintenance of Roads, 1st Division......	
Do. do. 2nd do. ...	
Do. do. 3rd do. ...	
Do. do. 4th do. ...	[illegible]
Do. do. 5th do. ...	
Do. do. 6th do. ...	
Do. do. 7th do. ...	
Do. do. 8th do. ...	
Repairing Wooden Railings in Roads ...	
Repairing Street Boards	
Removing Prickly-Pears	
Watering Mount Road and North Beach Road	
Extension of Watering	
Numbering Doors	
Drains.	
	9 6 8[illegible]
	8 1 9[illegible]
	8 8 4[illegible]

RECEIPTS.	Budget Estimates for 1871.
	RS.
Brought forward	....

MUNICIPALITY

STATEMENT of Receipts and Disbursements

Total of Budget estimates under Major Heads.	Receipts from 1st January to 28th February 1871.	Receipts in March 1871.	Total Receipts.	Total Receipts under Major Heads.	REMARKS.
RS.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
6,13,600	75,103 12 2	34,403 12 1	....	1,09,507 8 3	

OF MADRAS.

from 1st January to 31st March 1

DISBURSEMENTS.	Buget Grant for 187
	RS.
Brought forward...	....
Registry of Births and Deaths ...	4,5
Interest on Loan on Water Works and Water Rate ... ... Sinking Fund for liquidation of the Water Works Loan	28,5
Census	11,5
MISCELLANEOUS.	
People's Park	12,
Fire Engine Maintenance and Repairs ..	
Workshop Establishment for Repairs including Rent	1,
CONTINGENT.	
Stationery	2,
Printing Charges	2,
Advertising Charges	
Extra Writers	
Law Charges including Stamp Duty ...	1,
Insurance on Office Premises, &c. ...	
Office Furniture	
Compassionate Allowance	
Miscellaneous	1,
Maps of Divisions	2,
Improvements in Egmore	....
Fencing Cooum River	....
Compensation for removal of Huts in Tinnevelly Settlement	....
Tolls on Carriages and Animals entering the Town (Composition)... ...	....
Income Tax	....
Advances Recoverable	....

RECEIPTS.	Budget Estimates for 1871-72.
RATES ON HOUSES, BUILDINGS, & LANDS.	RS.
Arrears ... ... Current	....
GROUND RENTS	....
TAX ON ARTS, TRADES, PROFESSIONS, AND CALLINGS.	
Arrears for 1868 ... ... Do. 1869 ... ... Do. 1870 ... ... Collection, 1871-1872 ...	....
LIQUOR LICENSE TAX.	
Arrears for 1868 ... ... Do. 1869 ... ... Do. 1870 ... ... Collection, 1871-1872 ...	....
TAX ON CARRIAGES, HORSES, AND OTHER ANIMALS.	
Arrears ... ... Collection, 1871-1872 ...	....
REGISTRATION OF CARTS AND OTHER VEHICLES WITHOUT SPRINGS.	
Arrears ... Collection, 1871-1872 ... Registration of Transfer ...	....
TOLLS ON CARRIAGES AND ANIMALS ENTERING THE TOWN.	
Farm	....
Composition	....
MISCELLANEOUS.	
Government Contribution towards maintenance of roads	85,000
Rent of Market Stalls ...	8,250
Fees for Slaughter Houses ...	5,700
Strand Rents	500
Fees for Licenses for Dangerous and Offensive Trades. Permanent... ... Temporary... ..	6,000
Proceeds of Sale of Rubbish ...	2,500
PEOPLE'S PARK. Proceeds of Sale of Hay ...	4,500
PEOPLE'S PARK. Govt. Grant for Zoological Collections	3,960
PEOPLE'S PARK. Tiger Collections	1,800
PEOPLE'S PARK. Miscellaneous	250
Grazing and Avenues ...	4,000
Sewage Farms	1,500
Demand and Warrant Fees ...	3,500
Fines, Police	1,650
Do. on Contractors ...	1,000
Do. on Departments ...	3,000
Interest on Govt. Securities ...	1,200
Sale Proceeds of Lands, &c. ...	1,000
Do. of old Stores... ...	500
Other Items	1,500
IMPROVEMENTS.	
Proceeds—Sale of Houses, Vepery High Road ...	....
Reserve for unpaid Bills	....
Forming Napier Park	....
Law Charges including Stamp Duty ...	....
Lighting—Addition	....
Planting Esplanade and maintaing Wire Fence	....
Planting Avenue	....
Rent of Model Parcherries... ...	....
Opening out and Improving Kistnapah Maistry Street, Yeddapolliem ...	....

£

0 8 4 0

ture.
To be set off against expenditure.
To be set off against expenditure.
To be set off against expenditure.
Proportion of Executive Engineer's salary debited to Water Works Project, to be set off against expenditure.
Accountable to Government.
Realised by sale.
Arrears ... 7,650-0-0
Current ... 87,164-3-3
94,814-3-3

Th
been ot
1.

MUNICIPALITY

No. 2.—Statement of Receipts and Disbursements

	Total of Budget Estimates under Major Heads.	Receipts from 1st April 1871 to 31st January 1872.			Receipts in February and March 1872.			Total Receipts.			Total Receipts under Major Heads.			Remarks.
2. 3.														
4.	RS.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
	2,47,000	6,575	11	8	695	13	5	7,271	8	8				
		1,91,972	15	0	40,397	15	0	2,32,370	14	8				
5.											2,39,642	7	4	
	6,000	1,734	14	8	173	4	0	1,908	2	8				
											1,908	2	8	
6.														
		3,496	8	0	412	0	0	3,908	8	0				
7.	87,500	5,278	0	0	390	0	0	5,668	0	0				
		8,578	8	0	472	0	0	9,050	8	0				
		58,049	0	0	13,570	0	0	71,619	0	0				
											90,246	0	0	
8.		....			....			....						
	10,000	12	0	0	....			12	0	0				
		763	0	0	....			763	0	0				
9.		9,969	0	0	978	0	0	10,947	0	0				
											11,722	0	0	
1(														
	45,000	154	0	0	....			154	0	0				
		33,510	0	0	4,074	8	0	37,584	8	0				
											37,738	8	0	
1 1														
		163	10	10	....			163	10	10				
	12,500	10,142	13	4	2,714	0	0	12,856	13	4				
		24	4	0	5	0	0	29	4	0				
											13,049	12	2	
	49,000	40,883	5	4	7,300	0	0	48,183	5	4	48,183	5	4	
1	....	1,439	8	0	74	0	0	1,513	8	0	1,513	8	0	Accountable to the Farmer of Tolls.
2 3														
4	....	35,000	0	0	....			35,000	0	0				
	....	6,097	4	3	1,407	7	6	7,504	11	9				
	....	5,300	4	6	828	8	9	6,128	13	3				
	....	240	7	8	265	13	11	506	5	7				
		1,915	11	7	594	2	1	2,509	13	8	3,625	6	5	
	....	771	0	9	344	8	0	1,115	8	9				
	....	2,388	3	0	644	2	0	3,032	5	0				
		1,690	4	0	397	10	0	2,087	14	0				
	10,510	3,960	0	0	....			3,960	0	0	8,268	13	6	
		1,381	11	6	240	12	6	1,622	8	0				
		558	9	6	39	14	0	598	7	6				
	....	3,692	13	1	25	1	9	3,717	14	10				
	....	988	11	4	298	14	10	1,287	10	2				
	....	2,875	14	2	484	5	9	3,360	3	11				
	....	627	0	0	167	0	5	794	0	5				
	....	1,397	4	9	64	15	1	1,462	3	10				
	....	2,304	12	7	383	14	1	2,688	10	8				
	....	746	0	0	828	8	10	1,574	8	10				
	....	245	13	6	25	0	0	270	13	6				
	....	290	7	8	....			290	7	8				
	....	762	8	11	116	8	10	879	1	9				
	87,310										80,392	3	1	
	12,800	....			....			....						
	35,000	....			....			....						
	....	419	1	2	75	0	0	*a* 494	2	2				
	....	240	14	0	....			*b* 240	14	0				
	....	13	13	9	4	4	0	*c* 18	1	9				
	....	341	11	6	....			*d* 341	11	6				
	....	10	12	0	....			*e* 10	12	0				
	....	100	0	0	70	0	0	170	0	0				
	....	2	2	6	....			*f* 2	2	6	[illegible]	[illegible]	6	

a Sale of Hay, &c.
b Recovery of Costs to be set off against expenditure.
c Recoveries for breakages of lanterns, &c., to be set off against expenditure.
d Realized chiefly for damages *done to* wire fencing to be set off against expenditure.
e Amount overdrawn and *refunded, to* be set off against expenditure.
f A recovery to be set off against expenditure.
g Sale proceeds of land and building [illegible]

OF MADRAS.

from 1st April 1871 to 31st March

DISBURSEMENTS.	Budget Grants 1871-…
	RS
OFFICE.	
SALARIES	52,
ESTABLISHMENT.	
GENERAL DEPARTMENT	5,
COLLECTOR'S DEPARTMENT	19,
Ground Rents Establishments ...	
Miscellaneous :—	
Extra Writers	
Commission	
Extra Coolies	
ASSESSOR'S DEPARTMENT	2,
Miscellaneous :—	
Extra Writers	
Commissioners' Fees ...	
EXECUTIVE ENGINEER'S DEPARTMENT.	
In-door	3,
Out-door	5,
CONSERVANCY DEPARTMENT.	
In-door	1,
Out-door	1,84,
Registry of Births and Deaths.	4,
CONSERVANCY.	
Repair of Carts	1,
Repair of Boats	
Main Drain	1,
Digging Rubish Pits ...	3,
Killing Dogs	
Sanding Latrines	1,
Work Shops	1,
Stores	2,
	94,608 3 7

RECEIPTS.	Budget Estimates for 1871-72.
	RS
Brought forward...	....

MUNICIPALITY

Statement of Receipts and Disbursements

Total of Budget Estimates under Major Heads.	Receipts from 1st April 1871 to 31st January 1872.	Receipts in February and March 1872.	Total Receipts.	Total Receipts under Major Heads.	REMARKS.
RS.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
5,92,110	5,72,656 10 5	1,21,851 8 2	....	6,94,508 2 7	
....	100 0 0	70 0 0	170 0 0		f [illegible] expenditure,
....	2 2 6	....	f 2 2 6	38,157 0 6	g Sale proceeds of land and building

... OF MADRAS.

... from 1st April 1871 to 31st March ...

DISBURSEMENTS.	Budg... Grants ... 1871-7...
	RS.
Brought forward...	23,...
PUBLIC WORKS.	
New—Roads.	
New Metalling of Roads, 1st Division...	5,...
Do. do. 2nd do. ...	
Do. do. 3rd do. ...	
Do. do. 4th do. ...	
Do. do. 5th do. ...	
Do. do. 6th do. ...	
Do. do. 7th do. ...	
Do. do. 8th do. ...	
Improvements.	
Forming Napier Park behind Burghall's Stables	3,...
Sewage Farm Extension	2,...
Improving and extending Burial and Burning Grounds	4,...
Removal of Houses in Vepery High Road	12,...
Emergent Reserve	4,...
Constructing Cart Stands	2,...
Erection and Improvement of Parcherries and Hutting Grounds ...	5,...
Completing the Fencing of the Cooum from Law's Bridge to entrance of Napier Park	...
Drains.	
Constructing New Drains	5,...
Completing Screw Pile Drain at North-East angle of the Fort	1,...
Repairs—Buildings.	
Repairing Slaughter Houses ...	1,...
Do. General Market	...
Do. Latrines	2,...
Do. Cart Sheds	...
Do. Office Premises	...
Do. Public Wells	...
Do. Dust Bins	1,...
Do. Walls on road sides ...	...
Do. Toll Gates	...

RECEIPTS.	Budget Estimat... for 1871-7...
	RS.
Brought forward	....

MUNICIPALITY

STATEMENT of Receipts and Disbursements

Total of Budget Estimates under Major Heads.	Receipts from 1st April 1871 to 31st January 1872.	Receipts in February and March 1872.	Total Receipts.	Total Receipts under Major Heads.	REMARKS.
RS. 5,92,110	RS. A. P. 5,72,656 10 5	RS. A. P. 1,21,851 8 2	RS. A. P.	RS. A. P. 6,94,508 2 7	

.... | 100 0 0 | 70 0 0 | 170 0 0 |
.... | 2 3 6 | .... | f 2 3 6 | 38,157 0 6 | expenditure, g Sale proceeds of land and building

OF MADRAS.

from 1st April 1871 to 31st March

DISBURSEMENTS.	Budget Grant for 1871-
	RS.
Brought forward...	......
REFUND OF REVENUE.	
Refund of Rates on Houses, Buildings, and Lands.	
Arrears	
Current	
Do. of Tax on Arts, Trades, Professions, and Callings.	
Arrears for 1868 ...	
Arrears for 1869 ...	
Arrears for 1870 ...	
Current	
Prospective	
Do. of Liquor License Tax.	
Arrears for 1870 ...	1
Do. of Tax on Carriages, Horses, and other Animals.	
Current	
Prospective	
Do. of Government contribution for Maintenance of Roads ...	
Do. of Fines on Contractors ...	
Do. of Fines on Departments ...	
Do. of Demand and Warrant Fees	
Do. of Fees for Licenses for Dangerous and Offensive Trades —Permanent	
Do. of Sale proceeds of lands, &c.	
INTEREST ON LOAN ON WATER WORKS.	
SINKING FUND FOR LIQUIDATION OF THE WATER WORKS LOAN ...	52
CENSUS	10
MISCELLANEOUS.	
Peoples' Park	11
Fire Engine Maintenance and Repairs..	
Engineer's Stores Godown Rent ...	
CONTINGENT.	
Stationery	2
Printing Charges	2
Advertising Charges	
Extra Writers	

MUNICIPALITY OF MADRAS.

WATER DISTRIBUTION PROJECT.

Statement of Receipts and Disbursements to 31st March 1872.

RECEIPTS.	AMOUNT. RS.	A.	P.	DISBURSEMENTS.	AMOUNT. RS.	A.	P.
H. M. Government of India, Loan ...	10,85,000	0	0	Standing advance to Executive Engineer.	1,500	0	0
Sundries and Superintendence, sale of Specifications and Fines on Establishment	208	5	0	Sundries and superintendence, inclusive of expenditure for preparation of the Distribution Scheme	40,144	8	4
Fountains, sale of Bullocks and old materials of house purchased in Vepery, &c.	799	2	4	Fountains	11,088	6	5
				Delivery Channel	1,59,922	15	11
DELIVERY CHANNEL.				Do. Earth-work Labour ...	565	12	2
				Do. New Roads	474	13	9
Amount contributed by Government ... 80,832 0 0				Repairing Tanks...	3,546	1	6
Fines recovered from a Contractor for bad Chunam supplied ... 300 0 0				Cast Iron Pipes	7,47,447	5	7
Sale of Palmirahs, &c. 33 5 8				Office Laying Pipes	7,228	5	2
	81,165	5	8	Excavation and Laying Pipes per R. Woolley	81,893	1	0
Repairing tanks, reimbursement from Municipal Fund of certain charges incurred on that account	497	3	10	Charges paid to Mr. May, C.E., in England, for passing pipes, &c. ...	6,020	8	6
Office Laying Pipes, sale of trees ...	17	0	0	Messrs. H. S. King & Co. advance to meet Contingent expenses in England.	3,239	14	10
Deposits with Tenders, deposit from Messrs. Beck & Co.	210	10	0	Mr. R. Woolley, Fixed Deposit with Bank of Madras	48,500	0	0
Mr. Richard Woolley, security for due performance of his Contract ...	48,667	15	4	Balance with Bank of Madras on the 31st March 1872	6,002	1	6
Total...	11,16,580	9	9	Total...	11,16,580	9	9

W. H. AXELBY,
Head Accountant & Book-keeper.

JOHN C. LOCH,
Offg. President of the Municipal Commission.

Municipal Commissioners' Office, Madras, 1st April 1872.

APPENDIX A.

From CHARLES E. GOVER, Esq., Secretary, Census Committee, to JOHN C. LOCH, Esq., President, Madras Municipal Commission, dated Madras, 26th April 1872.

SIR,—I have the honour to forward in the statements that follow an abstract of the results of the Census of this city in September and November 1871. The figures shown are the final ones, and have been arrived at after the most careful scrutiny and tabulation of the schedules. You will observe that the total amounts to 397,552 souls.

It will at once strike every person that this amount is very much less than previous estimates of the population of the city. For some years it was believed that the inhabitants of Madras were not fewer than 750,000, while Sir Charles Trevelyan in 1863, when giving evidence before the Royal Sanitary Commission, stated that not less than one million persons dwelt in Madras; and, except in two cases to which I shall afterwards refer, no figure lower than 450,000 has ever been accepted since the beginning of this century. One exception was that of the Census taken in 1863. A copy of the return on this occasion is appended. It will be apparent, and was so at the time, that this statement is full of the grossest errors. Thus in Triplicane there were said to be 4,752 Hindoo men and 13,899 Hindoo women, or nearly three women to every man. Yet to these 18,651 adults, there were only 5,620 children, while, as a matter of fact, the children ought to be about equal to the female adults. So in Black Town there are only returned 11,448 children to 21,524 women, while in Egmore there are but 340 children to 1,499 women. In Nungumbaukum 3,452 women are entered against 1,438 men, but in Pereamoot there are 3,207 men to 1,643 women. Errors like these prove the most utter carelessness in the Census. It was also very well known at the time that a considerable portion of the houses were not censused at all. When the returns were sent in, they were not accepted as of any other value than as seeming to give a decent approximation to the truth, and in the subsequent official returns the population was taken at 450,000. It is now known that both estimates were much in excess of the truth.

There is also appended a statement of the only other actual enumeration of which I can learn, made in 1822. It will be seen that this gives a still higher number—nearly 470,000. This Census was taken as described in the covering letter printed with the abstract of its results. Probably the conicopolies were paid by the number of persons they were supposed to enumerate. If we examine the details we find that 161,589 children are entered against 109,246 adult males; on one side or other of this comparison there must be a mistake of 50,000 souls. Then there are 144,916 women against 109,246 men, and here there must be another error of 30,000 persons. But the 161,589 children dwelt in only 29,612 houses, and thus there must have been *in every house an average of nearly six children.* If we descend to details we come to figures so surprising that the wonder is how they ever could have been accepted. Thus in Mylapore, Royapettah, &c., we are told there was an *average of thirteen children in every house*, while in Tondiarpett, Tinnevelly Settlement, and the neighbourhood there were eight boys in in every house, but only four girls, making nearly thirteen children dwelling in a district where tiled houses are but one to five of thatched huts!

If the house-total be correct, and there is so little difficulty in making a correct list of the houses, and so little temptation to render a wrong account, while check was so easy by reference to the assessment roll, that we may presume it was not far wrong, there must have been an error of nearly 100,000 souls under the head of children alone. When we analyse the table still further, it is apparent that the error must be at least double this immense amount. At the present time the average number of persons to a house, including those unoccupied, is a little less than eight. If we assume this average in 1822, and there is no reason why we should not, the total population must have been about 237,000, and for other reasons it is clear that this was about the true figure. But we will look at the table from another side. The town was divided into 14 districts, and if the population of each be divided by the number of houses, it will be found that the average number of persons to a house is as shown in the margin. I explain the strange anomalies of the table in this way. Black Town was first censused. While the work was fresh, Major Ormsby gave personal attention to it, and saw that the conicopolies performed their task properly, hence the Black Town average is almost the same as that found in the recent Census. As the months rolled on, the enumeration lasting from 1st July 1822 till 31st January 1823, the interest of the authorities fell off, the conicopolies were allowed to do as they pleased and were paid according to the number of persons they returned, hence the house average varied according to the conscience of the conicopoly—from 36 persons to a house in Nungumbaukum to 10 persons in Poodoopett. It is perfectly absurd to suppose that the average per house in any large district can have been more than 12 persons. The largest families are in the respectable streets of Black Town, but there, as is shown, the average produced, both in 1822 and 1871, was only 8½ per house.

District.	Houses.	Population.	Persons to each house.
1. Black Town ...	14,093	120,646	8·5
2. Chintadrepettah ...	597	19,454	32·6
3. Pereamoot ...	897	15,787	17·6
4. Erroongoonam ...	315	6,825	21·7
5. Perambore, &c ...	1,940	31,721	16·3
6. Pursewaukum ...	611	12,302	20·
7. Egmore ...	271	4,487	·16·5
8. Poodoopettah ...	169	1,756	10·4
9. Oomaleswaren ...	308	9,886	32·1
10. Nungumbaukum...	90	3,281	36 4
11. Triplicane ...	3,769	76,928	20·4
12. Mylapore ...	2,056	62,718	30·5
13. Tondiarpett ...	1,673	49,965	29 8
14 Verandahs, &c ...	2,826	46,300	16·4

I have thought it necessary to enter into these details in order to show that the censuses of 1822 and 1863 afford no reason to believe that the enumeration of 1871 has understated the population. When analysed, their returns show that a larger population should not properly have been expected.

It now remains to show why the present statement should be accepted. It will be well to start in the first place from the number of houses, as this will enable us to judge of the population from the number *to each* house. The number of houses is accurately known from three sources—the assessment

registers, the very careful counting and numbering carried out by the Overseers, and that done by the enumerators. There were 51,800 houses in 1871 with a limit of error certainly not exceeding one-fifth per cent. Two independent and careful estimates of the average number of persons to each house were taken previous to 1871, one in 1865, I believe, by Dr. Cornish, the other by myself in 1869. The former resulted in an average of 7½ persons, and my own in an average of 10 persons. The latter was taken in a respectable part of the town, included no huts, and made no allowance for empty houses. The former took two representative districts—one parcherry, the other in a respectable town-quarter, and erred only in this—that it presumed that the number of huts was about equal to the number of houses, while in fact the huts are but as one to three of better class houses. On applying the requisite corrections as now disclosed by the proportion of empty houses and huts, I find that both estimates correspond almost exactly with the Census average of about eight persons, and, consequently, there is every reason to believe the latter average is correct. I may add that Mr. Grose also made an estimate the details of which I do not know, which, with the correction for empty houses, very closely approximates to the Census return.

I now proceed to describe the tests enforced at the time of the census. They were five-fold. In the first place, in addition to, and entirely distinct from, the ordinary enumerators, there was engaged a staff of 17 experienced and entirely trustworthy men to act as testers. As each enumerator came to office with his morning's work, the Superintendent made note of about one house in every ten, and directed a tester to re-census on the following day the houses so selected, and he was required to do this on a fresh schedule without being allowed to see the original schedule. The test schedule so obtained was then compared with the original. In case of error the enumerator was severely fined, and on a repetition of the offence was dismissed. In a few cases the enumerator challenged the test schedule. In these the houses were done a third time by the supervisor himself. The knowledge that their work would be thus tested rendered the enumerators so careful that errors were much fewer than might have been expected.

The second test was made in my room. I had drawn up, previous to the actual census, very careful and elaborate tables of what may be called the internal proportions the census should assume. Thus from the mortuary tables and a comparison of other Indian and European censuses, and making allowance as accurately as possible for the difference in circumstances, it had been approximately ascertained what the proportions of the sexes should be, what the proportions of the various ages, &c. The enumerator's work was so arranged that the schedules filled in each day were totaled the same evening in all these details, and on the following morning I carefully compared these totals with the standard tables previously prepared. This soon enabled me to ascertain that, among other matters, the ages of children were not being correctly given. The suspicious portion of the enumeration was then done again and orders issued directing the enumerators how to obtain more correct information. Of course, on a point like this, absolute accuracy could not be gained because the parents themselves did not know the ages of their children, but the result is now as accurate as the case permitted. This mode of testing was very efficacious, as the enumerators knew not how it was brought to bear and could not devise a way of evading it.

The third test came from the Commissioners, some of whom were so good as to go round with the enumerators, and others undertook the trouble of inquiring in their circle of acquaintance, favouring me with the result of their inquiries. Several cases of rudeness and one or two of neglect were thus brought to light, but there was a most gratifying unanimity among the Commissioners in admitting that the census though somewhat roughly, was very accurately carried through. I believe that there was no instance thus brought to light of a house that was not censused.

The fourth test was obtained by comparing the number of schedules with the ascertained number of houses. The number reported by the Overseers was 51,841, while the number of schedules was 51,730. The very difference was satisfactory as showing independent work. Every case of difference was, however, inquired into by special agency, and it was discovered that the actual difference was only five, as the rest was mainly owing to the fact that several European houses with large compounds had been numbered more than once, as they had gates in different roads and sometimes in different sections of the city. In a few other cases there had been difference of opinion whether a particular dwelling should be called a separate house or be entered with one to which it seemed to belong. Not a single instance has been brought to notice of a house which was not enumerated, although the Club was nearly forgotten. In several instances, English gentlemen complained that their houses had been omitted, but in almost every case a schedule was produced bearing the signature of the person complaining. In others the wife had filled up the schedule or given the necessary information; in some the butler had made the entries; in a few the enumerator had not arrived and the house was subsequently censused. In one or two only had the family been omitted, and that unavoidably, seeing that they had moved from one house not yet censused to another that had been censused. An occasional error of this sort was inevitable as the census occupied eleven days.

The fifth test was the final census. I am not of opinion that this was of much importance since the final census introduced more errors than it corrected. This was, however, foreseen and guarded against. The final counting was of great use in one respect, seeing that it caused the census to include the normal number of Europeans who, in September, were largely absent.

It is a pleasure to be able to state that these careful tests were most satisfactorily met, probably because it is especially the province of such tests as those first-named to prevent error, because of the almost certainty of its detection and punishment if committed. The tables in the detailed report will enable the Commissioners to judge for themselves on many points, and it is hoped that they will merit and gain the approbation and confidence of the whole community.

I have the honour to submit the following tables :—

1. Abstract and covering letter of the Census of 1822.
2. Abstract of the results of the Census of 1863.
3. Abstract do. do. 1871.
4. Abstract do. do. 1871, with proportionate distribution of the houseless poor.

Statement showing the number of Men, Women, and Children residing in the Black Town and Suburbs of Madras, distinguishing Europeans and East Indians, Native Christians, Hindoos, and Mahomedans, prepared according to Police Divisions.

Division.	Villages.	Europeans and East Indians.			Total.	Native Christians.			Total.	Hindoos.			Total.	Mahomedans.			Total.	Total in each Village.	Total in each Division.
		Men.	Women.	Children.		Men.	Women.	Children.		Men.	Women.	Children.		Men.	Women.	Children.			
1st	East portion of Black Town, east of Popham's Broadway, including Fort.	1,494	1,118	1,715	4,327	510	826	447	1,783	15,398	21,524	11,448	48,370	1,672	1,726	785	3,784	...	58,264
2nd	West portion of Black Town, west of Popham's Broadway to the Canal ...	915	1,634	1,381	3,989	916	1,187	709	2,812	25,893	34,501	20,284	80,678	1,043	1,398	820	3,261	...	90,740
3rd	Triplicane	39	45	86	170	228	290	287	805	4,752	13,899	5,620	24,271	4,663	6,594	7,279	18,536	43,782	
	Poodoopaukum	81	62	75	218	301	220	208	729	3,773	4,066	4,337	12,176	2,223	2,489	2,529	7,241	20,364	
	Teruvateeswarapettah	8	7	11	26	33	52	63	148	1,897	2,191	2,587	6,675	3,699	3,580	2,892	10,171	17,020	81,166
4th	St. Thomé and Mylapore	236	256	215	707	574	705	456	1,735	3,812	3,870	3,744	11,426	735	1,196	836	2,767	16,685	
	Royapettah	102	110	178	390	270	371	294	935	3,935	6,134	3,056	13,125	1,475	1,794	1,491	4,760	19,210	
	Kistnampettah	...	...	...	...	25	20	27	72	653	676	669	1,998	214	196	184	594	2,664	
	Meersahibpettah	1	2	2	5	132	146	171	449	340	374	358	1,072	251	308	241	800	2,826	
	Vellaula Tanampettah	2	2	7	11	123	183	79	385	463	594	461	1,517	15	19	12	46	1,959	
	Palley do.	...	...	...	...	...	...	...	...	185	208	231	624	9	10	9	28	652	43,446
5th	Chintadrepettah	136	182	198	516	235	253	253	741	4,785	4,251	3,419	12,455	262	181	191	634	14,846	
	Egmore	140	165	233	538	18	73	275	366	1,476	1,499	340	3,315	38	58	37	133	4,852	
	Comaleeswarenpettah	3	5	5	13	5	7	5	17	898	1,034	949	2,881	9	10	13	32	2,943	
	Narasingapoorum	182	187	229	598	185	204	161	550	732	795	806	2,333	409	385	699	1,493	4,974	
	Nungumbaukum	84	72	92	248	199	230	265	694	1,438	3,452	1,343	6,233	165	165	263	593	7,768	
	Chetput	10	7	8	25	4	2	1	7	398	385	273	1,056	28	24	23	70	1,158	
	Poodoopettah	35	65	70	170	133	140	57	330	1,338	1,387	1,469	4,194	295	285	262	842	5,536	
	Munnarsamy Covil	...	...	...	...	...	...	...	...	252	189	183	624	6	7	1	14	638	41,715
6th	Pareamettee	298	263	283	844	12	19	15	46	3,207	1,643	1,323	6,173	65	155	43	263	7,326	
	Vepery	130	134	179	443	39	43	69	151	849	478	375	1,702	294	268	231	793	3,089	
	Pursewaukum	419	554	684	1,657	109	147	123	379	5,025	5,115	3,668	13,808	340	401	422	1,163	17,007	
	Choolay	141	148	232	521	21	42	6	109	1,200	1,300	809	3,309	125	135	67	327	4,266	
	Kilpauk	6	8	6	20	...	...	...	...	131	110	79	320	...	...	...	...	340	
	Perambore	19	18	16	53	...	...	...	...	609	668	478	1,755	5	6	2	13	1,821	
	Voyauserpaudy	16	20	25	61	4	5	2	11	473	487	499	1,459	5	6	5	16	1,547	
	Cosapettah	...	...	...	...	...	...	...	...	1,098	1,265	885	3,248	5	6	...	11	3,259	
	Eroongoonum	1	2	2	5	...	...	...	...	992	1,149	699	2,840	2	2	2	6	2,851	41,506
7th	Coreekoopettah	2	2	3	7	7	7	5	19	1,723	2,052	1,651	5,426	27	33	24	84	5,586	
	Tondiarpet	17	24	37	78	12	13	12	37	4,828	5,812	3,510	14,150	978	831	791	2,600	16,865	
	Washermenpettah	22	16	26	64	81	92	56	229	2,126	2,833	1,806	6,165	520	552	394	1,466	7,924	
	Cosapettah	4	5	6	15	...	...	...	...	1,042	1,116	942	3,100	143	136	195	474	3,589	
	Sunjeeveroyenpettah	...	...	...	...	...	...	...	...	750	790	611	2,151	2	...	...	2	2,153	
	Jondrapettah	...	...	...	...	...	...	...	...	1,173	1,386	2,055	4,614	...	...	...	...	4,614	
	Attapaulium	55	52	66	173	292	286	225	803	4,240	4,088	3,722	12,050	314	313	242	869	13,895	
	Royapoorum	144	169	163	476	2,587	2,995	1,915	7,497	2,835	3,272	2,278	8,385	...	...	...	...	16,358	70,934
	Total of Europeans and East Indians..........				16,868	Total of Native Christians.			21,839	Total of Hindoos............			325,678	Total of Mahomedans ...			63,886	Total.	427,771

D. MORGAN, *Assessor.*

Assessor's Office, Madras, 15th April 1863.

To THE MUNICIPAL COMMISSIONERS, MADRAS.

From Major W. ORMSBY, Superintendent of Police, to the Secretary to the Board of Revenue, dated Madras, Police Office, 6th May 1823.

SIR,—I have now the honour to transmit an Abstract of the Census of the population of Madras, the aggregate amount of which has been estimated at 415,751, exclusive of the inhabitants residing within the precincts of the Palace of His Highness the Nabob of the Carnatic, the number of the latter is assumed at 46,300 persons, making a grand total of 462,051. No Europeans have been included in this estimate.

Population of Madras and its Suburbs ...	415 751
Number of inhabitants residing in the Nabob's Garden, &c.	46,300
Total...	462,051

More time has been occupied in preparing the Census than I had expected, but from the attention paid by the conicopolies employed, I trust it may be found as accurate as could under all circumstances be anticipated.

The Census was commenced on the 1st July last, and during the first six months two writers and six conicopolies were employed, one writer and three conicopolies were then discharged, and the other writer and three conicopolies were kept until 31st January last, and the total expense incurred amounts to Rupees 468.

I am happy to be enabled to report that I have not received the slightest complaint from any of the inhabitants on account of the Census, and that no difficulties have occurred in carrying the measure into effect.

POPULATION OF MADRAS IN 1822.

Black Town, and the Villages within the Jurisdiction of Madras.	No. of the Houses.	Men.	Women.	Boys.	Girls.	Total.
Black Town	14,098	88,789	45,720	21,805	19,832	120,646
Chintadrepettah	597	5,207	7,083	3,821	3,343	19,454
Pereamettoo	897	4,605	4,834	3,260	3,088	15,787
Erroongoonnam	315	1,699	2,222	1,524	1,380	6,825
Rosspettah, Narrianpolyam, Perambore, Peterpettah, Vyasarvady, and Cosapettah.	1,940	7,926	8,999	7,603	7,193	31,721
Pursewaukum	611	3,604	3,878	2,415	2,405	12,302
Egmore	271	1,138	1,500	1,124	725	4,487
Poodoopettah	169	423	628	363	342	1,756
Comalasweren Covil, and Manarsamy Covil.	308	2,710	3,736	1,718	1,727	9,886
Nungumbaukum	90	957	1,205	560	559	3,281
Triplicane, Trevetuswerumpet, Poodoopauk, Vallabagraram, Chepauk, and Narasingapooram	3,769	22,550	24,236	15,318	14,824	76,928
Mylapore, Kistnampettah, Royapett, Meersaibpet, Alvarpet, Teynampet China Teynampet, and Pracherry ...	2,056	16,819	19,735	13,342	12,817	62,713
Washerpettah, Sunjivyroyenpet, Careapet, Tondiarpet, Royapooram, and Parcherry.	1,673	7,819	21,140	7,644	13,362	49,965
Houses, Verandahs, and Huts of Khandans and their servants	2,826	......	......	......	......	46,300
	29,612	109,246	144,916	79,992	81,597	462,051

W. ORMSBY,
Superintendent of Police.

Note by Census Officer.—The number of Europeans in 1871 was 3,613. It may therefore be presumed that not less than 2,500 Europeans were in the city in 1823. If these be added to the total shown above, the actual number of persons returned as inhabitants could be not less than 464,551.

CHARLES E. GOVER,
Census Officer.

12th April 1872.

Abstract Statement of the Madras Municipal Census for 1871.

Division.	Ward.	Section.	Hindus.	Europeans.	Eurasians.	Musulmans.	Parials.	Other Races.	Total.	Total Population of Wards.	Total Population of Divisions.
1st	West.	1st	13,486	2	21	1,536	2,250	...	15,945		
"	"	2nd	15,343	4	134	1,450	1,952	...	16,931	31,976	
"	East.	1st	19,416	194	626	1,892	3,446	213	22,341		
"	"	2nd	6,713	...	6	928	1,018	...	7,647		
"	"	3rd	2,781	1	25	113	1,354	1	2,921	32,909	64,885
2nd	North.	1st	3,321	40	794	129	2,541	...	4,284		
"	"	2nd	6,362	...	6	109	734	...	6,477		
"	"	3rd	7,716	28	491	704	895	...	8,934	19,695	
"	South.	1st	2,302	77	382	13	612	134	2,908		
"	"	2nd	4,691	...	...	5	33	...	4,696		
"	"	3rd	6,444	...	...	22	66	...	6,466		
"	"	4th	4,041	84	124	49	72	1	4,299	18,369	
"	Centre	1st	3,526	5	90	51	208	...	3,672		
"	"	2nd	1,880	...	...	7	654	...	1,887		
"	"	3rd	7,360	...	...	13	71	...	7,373		
"	"	4th	9,817	...	8	373	194	1	10,199		
"	"	5th	6,809	...	...	58	102	...	6,867	34,998	73,062
3rd	South.	1st	5,333	92	435	37	828	98	5,995		
"	"	2nd	1,336	231	679	12	615	34	2,292		
"	"	3rd	2,792	887	291	515	593	99	4,584	12,871	
"	North.	4th	1,114	...	...	1,582	206	...	2,696		
"	"	5th	3,229	66	484	129	455	28	3,936		
"	"	6th	5,916	19	449	1,161	2,395	1	7,546		
"	"	7th	1,113	7	6	683	59	...	1,809		
"	"	8th	4,619	49	239	86	186	4	4,997		
"	"	9th	3,423	1	...	3,138	284	...	6,562		
"	"	10th	5,847	7	19	123	230	...	5,996		
"	"	11th	5,250	6	83	338	341	7	5,684	39,226	52,097
4th	"	1st	4,207	39	37	758	1,755	3	5,094		
"	"	2nd	4,183	34	607	323	2,457	...	4,607	9,701	9,701

Abstract Statement of the Madras Municipal Census for 1871.—(*Concluded.*)

Division.	Ward.	Section.	Hindus.	Europeans.	Eurasians.	Muhammadans.	Pariahs.	Other Races.	Total.	Total Population of Wards.	Total Population of Divisions.
5th	North	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5	[illegible]		
"	"	2	[illegible]	4	[illegible]	[illegible]	[illegible]	...	[illegible]		
"	"	3rd	[illegible]	132	[illegible]	[illegible]	[illegible]	120	9,462		
"	"	4th	[illegible]	7	[illegible]	133	[illegible]	21	4,218	38,574	
"	South.	1st	[illegible]	205	[illegible]	[illegible]	3,298	6	10,605		
"	"	2nd	[illegible]	74	321	225	1,423	5	5,153		
"	"	3rd	[illegible]	[illegible]	199	71	1,574	12	4,352		
"	"	4th	[illegible]	[illegible]	508	1,041	3,868	3	11,217	31,327	64,901
6th	North	1st	[illegible]	[illegible]	301	258	2,866	...	7,766	7,766	
"	South	1st	[illegible]	[illegible]	272	376	3,386	11	6,507		
"	"	2nd	3,858	106	234	762	2,200	8	4,948	11,455	19,221
7th	North	1st	4,896	9	165	149	2,522	...	5,219		
"	"	2nd	4,258	1	17	253	199	...	4,529		
"	"	3rd	4,506	33	339	308	792	3	5,189		
"	"	4th	1,978	48	352	691	1,175	5	3,074	18,011	
"	South	1st	6,842	...	21	769	247	...	7,632		
"	"	2nd	6,445	...	...	2,982	22	...	9,428		
"	"	3rd	3,187	7	98	2,679	919	59	6,030	23,090	
"	Centre	1st	3,806	36	25	5,110	378	2	8,979		
"	"	2nd	4,592	...	...	3,096	252	...	7,688		
"	"	3rd	2,783	8	44	2,912	1,102	...	5,747		
"	"	4th	1,998	38	110	3,276	562	3	5,425	27,839	68,940
8th	North	1st	4,173	8	18	1,933	1,086	...	6,137		
"	"	2nd	4,394	53	61	1,254	757	...	5,767		
"	"	3rd	[illegible]	77	51	200	2,316	4	5,916		
"	"	4th	[illegible]	51	394	1,517	1,853	1	8,331	26,151	
"	South	1st	4,160	68	297	606	1,080	11	5,082		
"	"	2nd	[illegible]	2	...	[illegible]	[illegible]	...	5,268		
"	"	3rd	[illegible]	54	18	[illegible]	[illegible]	1	[illegible]	14,962	41,113
Houseless poor.			[illegible]	2	[illegible]	[illegible]	[illegible]	6	[illegible]	3,632	3,632
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	......	397,552

NOTE.—The population of Fort St. George included in the above, is as follows, viz. :—

Hindus	... ...	345
Europeans	... ...	864
Eurasians	... ...	237
Mussulmans	... ...	90
Other Races	... ...	2
	Total...	1,538

N.B.—Pariahs are included in the Column headed "Hindus," but are shown separately for reference.

MADRAS, CENSUS OFFICE, 10*th April* 1872. CHARLES E. GOVER, *Census Officer.*

Abstract Statement (with houseless poor distributed) of the Madras Municipal Census, 1871.

Division.	Ward.	Section.	Hindus.	Europeans.	Eurasians.	Mussulmans.	Pariahs.	Other Races.	Total.	Total Population of Wards.	Total Population of Divisions.
1st	West	1st	13,635	2	21	1,549	2,307	...	15,207		
"	"	2nd	15,510	4	134	1,463	1,957	...	17,111	32,318	
"	East	1st	19,622	194	626	1,907	3,511	213	22,562		
"	"	2nd	6,777	...	6	936	1,085	...	7,719		
"	"	3rd	2,807	1	25	114	1,377	1	2,948	33,229	65,547
2nd	North	1st	3,352	40	794	130	2,595	...	4,316		
"	"	2nd	6,423	...	6	110	746	...	6,539		
"	"	3rd	7,790	23	491	710	913	...	9,014	19,869	
"	South	1st	2,324	77	382	13	622	134	2,930		
"	"	2nd	4,736	...	...	5	34	...	4,741		
"	"	3rd	6,507	...	...	22	67	...	6,529		
"	"	4th	4,080	84	124	49	73	1	4,338	18,538	
"	Centre	1st	8,608	5	90	52	207	...	8,755		
"	"	2nd	1,898	...	...	7	665	...	1,905		
"	"	3rd	7,431	...	...	13	72	...	7,444		
"	"	4th	9,911	...	8	376	198	1	10,296		
"	"	5th	6,873	...	...	58	104	...	6,931	35,331	73,738
3rd	South	1st	5,384	92	435	37	840	98	6,046		
"	"	2nd	1,349	231	679	12	625	34	2,305		
"	"	3rd	2,818	889	291	520	608	99	4,617	12,968	
"	North	4th	1,124	...	...	1,595	210	...	2,719		
"	"	5th	3,258	66	484	131	458	28	3,967		
"	"	6th	5,972	19	449	1,171	2,447	...	7,612		
"	"	7th	1,123	7	6	688	60	...	1,824		
"	"	8th	4,664	49	239	86	190	4	5,042		
"	"	9th	3,155	1	...	3,167	239	...	6,623		
"	"	10th	5,903	7	19	12[illegible]	235	...	6,058		
"	"	11th	5,300	6	83	341	316	7	5,737	39,577	52,545
4th	"	1st	4,247	39	87	765	1,785	3	5,141		
"	"	2nd	4,223	34	67	326	2,499	...	4,650	9,791	9,791

Abstract Statement (*with houseless poor distributed*) *of the Madras Municipal Census*, 1871.—(**Concluded.**)

Division.	Ward.	Section.	Hindus.	Europeans.	Eurasians.	Mussulmans.	Pariahs.	Other Races.	Total.	Total Population of Wards.	Total Population of Divisions.
5th	North	1st	8,545	139	701	567	2,046	5	9,957		
"	"	2nd	8,819	4	120	1,176	816	...	10,119		
"	"	3rd	8,541	132	631	119	2,052	126	9,549		
"	"	4th	3,938	7	129	164	915	21	4,259	33,884	
"	South.	1st	7,863	205	1,246	1,379	3,348	6	10,699		
"	"	2nd	4,571	74	321	227	1,449	5	5,198		
"	"	3rd	3,946	164	199	71	1,600	12	4,392		
"	"	4th	9,702	60	503	1,050	3,935	3	11,318	31,607	65,491
6th	North	1st	7,054	218	301	260	2,910	...	7,833	7,833	
"	South	1st	5,968	136	72	379	3,438	11	6,566		
"	"	2nd	3,875	106	234	768	2,236	8	4,991	11,557	19,390
7th	North	1st	4,942	9	165	150	2,562	...	5,266		
"	"	2nd	4,298	1	17	255	202	...	4,571		
"	"	3rd	4,547	33	339	311	805	8	5,238		
"	"	4th	1,995	48	352	696	1,195	5	3,096	18,166	
"	South	1st	6,906	...	21	776	251	...	7,703		
"	"	2nd	6,507	...	...	3,009	22	...	9,516		
"	"	3rd	3,216	7	98	2,707	985	59	6,087	23,306	
"	Centre	1st	3,842	36	25	5,156	383	2	9,061		
"	"	2nd	4,633	...	...	3,122	256	...	7,755		
"	"	3rd	2,809	8	44	2,941	1,122	...	5,802		
"	"	4th	2,016	38	110	3,311	571	3	5,478	28,096	69,568
8th	North	1st	4,217	8	18	1,950	1,105	...	6,193		
"	"	2nd	4,434	58	61	1,265	769	...	5,818		
"	"	3rd	5,635	77	51	201	2,354	4	5,968		
"	"	4th	6,399	51	394	1,560	1,884	1	8,405	26,384	
"	South	1st	4,139	68	297	611	1,098	11	5,126		
"	"	2nd	5,191	2	...	125	227	...	5,318		
"	"	3rd	4,400	54	18	181	1,639	1	4,654	15,098	41,482
...	...	...	330,052	3,613	12,013	50,964	69,145	910	397,552	......	397,552

Note.—The population of Fort St. George included in the above, is as follows, viz. :—

Hindus	345
Europeans	864
Eurasians	287
Mussulmans	90
Other Races	2
Total	1,588

N.B.—Pariahs are included in the Column headed "Hindus," but are shown separately for reference.

CHARLES E. COVER, *Census Officer.*

MADRAS CENSUS OFFICE, 10*th April* 1872.

APPENDIX B.

MADRAS MUNICIPALITY.

REPORT ON THE SANITARY DEPARTMENT, FOR THE YEAR 1871-72.

ACT V. of 1871 received the sanction of the Governor-General and became operative April 1st, 1871, the first day of the official year. The new appointments under that Act were gazetted on the 5th April, and on that day I assumed charge of the Sanitary Department and have held it throughout the year. Mr. Ross, who had hitherto acted under general orders of Mr. Lee the Executive Engineer, was appointed Assistant Sanitary Inspector. For the first time, therefore, the Municipality obtained a special administrative staff directly responsible for the sanitation of the town. As a consequence of this and the personal attention that could now be given, the department was at once thoroughly re-organized. In 1870-71 there were nineteen Overseers, three, four, and even five to a division, each one working through the whole district Only the senior Overseer was responsible, while he could always evade responsibility by asserting that he was somewhere else in the division when any irregularity occurred. To remedy this evil the divisions were divided into wards, as follows :—

TABLE I.

Madras Municipal Divisions.

1st Division	West Ward. East do.
2nd Division	North do. South do. Centre do.
3rd Division	North do. South do.
4th Division	....
5th Division	North Ward. South do.
6th Division	North do. South do.
7th Division	North do. South do. Centre do.
8th Division	North do. South do.

Over each ward was placed an Overseer, to be personally and fully responsible for the condition of the ward. In this way the number of Overseers was reduced to 17, and their cost from Rupees 875 monthly to Rupees 705 monthly, showing an immediate and direct saving of Rupees 170 per mensem, while more than the previous amount of work was efficiently performed. This system has worked admirably. Not that the wards have always been adequately supervised, but the system has made it possible to discover the exact powers of each Overseer, and the inefficient ones are being gradually removed. Most of them, however, have performed their duties in a highly praiseworthy manner, and many districts of Madras are showing the beneficial results of careful sanitation.

The wards are divided into 59 " Sections" of limited area. Over each is a " Peon" who is expected to keep the sweepers, &c., to their work, and bring all irregularities to the notice of the Overseer. The following table shows the full arrangement for all the divisions :—

TABLE II.

Municipal Sanitary Staff.

Division.	Ward.	Overseer of Ward.	Salary of Overseer.	Number of Sections.
1st ...	West ...	Aroonaghery Moodelly ...	40	5
	East ...	Mr. Gibson	25	6
2nd ...	North ...	Nullapah Moodelly	50	5
	South ...	Somasoondra Moodelly ...	40	3
	Centre ...	Narayanaiya	25	3
3rd ...	South ...	Poongavanum Moodelly ...	25	2
	North ...	Ruthna Moodelly	70	5
4th ...	....	Ponnarungum Naidoo... ...	25	2
5th ...	North ...	Rajaruthna Moodelly	50	5
	South ...	Pardasardy Naidoo	25	4
6th ...	North ...	Mr. Godfrey	50	4
	South ...	Mr. Vaughan	25	2
7th ...	North ...	Mr. Lurshay	25	3
	South ...	Ramdoss Naidoo	25	3
	Centre ...	Gooroosawmy Naidoo	120	4
8th ...	North ...	Lokiah Rajoo	45	4
	South ...	Thungapragasa Moodelly ...	50	3

Although the out-door staff has, speaking generally, worked in a very satisfactory manner, it cannot be said that the city is in a desirable sanitary state. It is best frankly and at once to admit that the condition of health (and the object of sanitary work is to preserve health) in Madras is most unsatisfactory and the death-rate exceedingly high. When it is remembered that Madras is purely an English foundation, that for nearly a century and a half it has enjoyed municipal institutions, it is a matter of great surprise that it should now be necessary to report that Madras is probably one of the most unhealthy cities of any size in the British Empire, and that the death-rate is nearly double what may be called its normal or proper rate. One great excuse of this evil lies in the fact that, till now, the death-rate has never been known, and the figures that will follow are the first trustworthy intimation of the great unhealthiness of the city. This ignorance has been owing to the want of an accurate knowledge of the population of the city. The inhabitants of Madras have usually been estimated as above half a million, and Sir Charles Trevelyan, in 1863, believed them to exceed one million. The lowest figure ever given was 450,000, and this was only introduced a few years back. For a very long period 750,000 was the accepted and official estimate of the population of Madras. But upon this number the recorded deaths do not give a high death-rate. On the contrary, there are a few towns in England giving so low a rate as this would show. It has therefore been believed that Madras was sufficiently healthy in spite of its great neglect of all sanitary precaution, and hence it was deemed unnecessary to launch out into great expenditure merely to improve what was already good enough. There has already been presented to the Commissioners a statement showing how easy it was to over-estimate the inhabitants of the city, and to what an excess this error led.

The Census of 1871 has placed the whole subject on another footing. We now know what the population is, with a limit of error of certainly not more than one per cent. It is necessary therefore to investigate the whole question anew, and lay before Government and the Commissioners the true facts regarding the health of the city. To do this clearly and as succinctly as circumstances permit, I propose to report in the following order :—

1. The actual population.
2. The actual mortality.
3. The death-rate
4. The causes of the high death-rate.
5. The remedial measures adopted.
6. The remedial measures proposed.
7. The working of the department during the year.

In this way it will be possible to go fairly through the whole subject without burdening the reader with too great a multiplication of figures at any one time. The portion of the report occupied with mortality is necessarily long and well furnished with tables, as it is most desirable to place on record, at the earliest possible moment, the great facts revealed by the new light shed on the mortuary return of the census results. The necessity for the careful and repeated calculation of every set of figures has made the report a work of time and very great labour, otherwise it would have been presented at an earlier date, though, I trust, it will not be considered unduly in arrears, when it is remembered that it contains the full details of sanitary work up to March 31st, 1872, and that only three months has been occupied in its preparation.

THE POPULATION OF MADRAS.

1. The following table is extracted from the first report on the Madras Census, and ives the figures as finally corrected.

TABLE III.

Madras Municipal Census of 1871, with houseless poor distributed.

Division.	Ward.	Section.	Hindus. Caste Hindus.	Hindus. Pariahs, Chuckiers, &c.	Hindus. Total.	Europeans.	Eurasians.	Musulmans.	Other Races.	Total.	Total Population of Wards.	Total Population of Divisions.
1st	West	1st	11,328	2,307	13.635	2	21	1,549	...	15,207		
”	”	2nd	13,553	1,957	15,510	4	134	1,463	...	17,111	32,318	
”	East	1st	16,111	3,511	19,622	194	626	1,907	213	22,562		
”	”	2nd	5,742	1,035	6,777	...	6	936	...	7,719		
”	”	3rd	1,430	1,377	2,807	1	25	114	1	2,948	33,229	65,547
2nd	North	1st	757	2,595	3,352	40	794	130	...	4,316		
”	”	2nd	5,677	746	6,423	...	6	110	...	6,539		
”	”	3rd	6,877	913	7,790	23	491	710	...	9,014	19,869	
”	South	1st	1,702	622	2,324	77	382	13	134	2,930		
”	”	2nd	4,702	34	4,736	...	...	5	...	4,741		
”	”	3rd	6,440	67	6,507	...	...	22	...	6,529		
”	”	4th	4,007	73	4,080	84	124	49	1	4,338		
”	Fort St George	......	116	229	345	864	287	90	2	1,588	20,126	

Madras Municipal Census of 1871, *&c.*—(Concluded.)

Division.	Ward.	Section.	HINDUS. Caste Hindus.	Pariahs, Chuck-lers, &c.	Total.	Europeans.	Eurasians.	Mussulmans.	Other Races.	Total.	Total Population of Wards.	Total Population of Divisions.
2nd	Centre	1st	8,401	207	8,608	5	90	52	...	8,755		
"	"	2nd	1,233	665	1,898	...	...	7	...	1,905		
"	"	3rd	7,359	72	7,431	...	...	13	...	7,444		
"	"	4th	9,713	198	9,911	...	8	376	1	10,296		
"	"	5th	6,769	104	6,873	...	...	58	...	6,931	35,331	75,326
3rd	North	4th	914	210	1,124	...	...	1,595	...	2,719		
"	"	5th	2,800	458	3,258	66	484	131	28	3,967		
"	"	6th	3,525	2,447	5,972	19	449	1,171	1	7,612		
"	"	7th	1,063	60	1,123	7	6	688	...	1,824		
"	"	8th	4,474	190	4,664	49	239	86	4	5,042		
"	"	9th	3,216	239	3,455	1	...	3,167	...	6,623		
"	"	10th	5,668	235	5,903	7	19	124	...	6,053		
"	"	11th	4,954	346	5,300	6	83	341	7	5,737	39,577	
3rd	South	1st	4,544	840	5,384	92	435	37	98	6,046		
"	"	2nd	724	625	1,349	231	679	12	34	2,305		
"	"	3rd	2,094	379	2,473	25	4	430	97	3,029	11,380	50,957
4th	"	1st	2,462	1,785	4,247	39	87	765	3	5,141		
"	"	2nd	1,724	2,499	4,223	34	67	326	...	4,650	9,791	9,791
5th	North	1st	6 499	2,046	8,545	139	701	567	5	9,957		
"	"	2nd	8,003	816	8,819	4	120	1,176	...	10,119		
"	"	3rd	6,489	2,052	8,541	132	631	119	126	9,549		
"	"	4th	3,023	915	3,938	7	129	164	21	4,259	33,884	
"	South	1st	4,520	3,343	7,863	205	1,246	1,379	6	10,699		
"	"	2nd	3,122	1,449	4,571	74	321	227	5	5,198		
"	"	3rd	2,346	1,600	3,946	164	199	71	12	4,392		
"	"	4th	5,767	3,935	9,702	60	503	1,050	3	11,318	31,607	65,491
6th	North	1st	4,144	2,910	7,054	218	301	260	...	7,833	7,833	
"	South	1st	2,530	3,438	5,968	136	72	379	11	6,566		
"	"	2nd	1,639	2,236	3,875	106	234	768	8	4,991	11,557	19,390
7th	North	1st	2,380	2,562	4,942	9	165	150	...	5,266		
"	"	2nd	4,096	202	4,298	1	17	255	...	4,571		
"	"	3rd	3,742	805	4,547	33	339	311	8	5,233		
"	"	4th	800	1,195	1,995	48	352	696	5	3,096	18,165	
"	South	1st	6,655	251	6,906	...	21	776	...	7,703		
"	"	2nd	6,485	22	6,507	...	...	3,009	...	9,516		
"	"	3rd	2,281	935	3,216	7	98	2,707	59	6,087	23,306	
"	Centre	1st	3,459	383	3,842	36	25	5,156	2	9,061		
"	"	2nd	4,377	256	4,633	...	...	3,122	...	7,755		
"	"	3rd	1,687	1,122	2,809	8	44	2,941	...	5,802		
"	"	4th	1,445	571	2,016	38	110	3,311	3	5,478	28,096	69,568
8th	North	1st	3,112	1,105	4,217	8	18	1,950	...	6,193		
"	"	2nd	3,665	759	4,434	58	61	1,265	...	5,818		
"	"	3rd	3,281	2,354	5,635	77	51	201	4	5,968		
"	"	4th	4,515	1,884	6,399	51	394	1,560	1	8,405	26,384	
"	South	1st	3,041	1,098	4,139	68	297	611	11	5,126		
"	"	2nd	4,964	227	5,191	2	...	125	...	5,318		
"	"	3rd	2,761	1,639	4,400	54	18	181	1	4,654	15,098	41,482
...	...	...	260,907	69,145	330,052	3,613	12,0 3	50,964	910	397,552	...	397,552

This table is the base of all the calculations that follow. With the exception of a temporary influx of people during the commercial high tide of 1864, caused by the American war, there is no reason to suppose the population has materially altered during the decade, 1861—71, and the actuals of the latter year are therefore assumed during the whole period, in the certainty that the fluctuations must have been of very minor importance.

2. The actual Mortality.—The total deaths recorded throughout the year 1871-72 were 13,215. The average annual deaths during the decade were only 12,341·8. There was therefore an excess beyond the average of 873·2 deaths, or the large proportion of 7 per cent. With the exception of the year 1866-67, when a virulent cholera epidemic very greatly enhanced the deaths, there were more deaths in 1871-72 than in any year since 1862-63.

1862-63	gave 14,602	deaths.
1863-64	do. 11,200	do.
1864-65	do. 9,878	do.
1865-66	do. 11,582	do.
1866-67	do. 14,636	do.

The variations in the mortality of Madras are often very surprising, and in earlier years the vibrations were rapid and extensive. Since Municipal Institutions have been in force, the limit of change has been much less, and the difference between the highest and lowest years comparatively small. Thus 1868-69 was the healthiest year, with a mortality of 11,526 persons. The year just expired was the highest, with 13,215 deaths, showing a difference of only 1,689 deaths 1866-67 was the most unhealthy, with 14,636 deaths, showing a difference of no less than 4,758 deaths, or more than twice the range in recent years. The year 1862 to 1867 exhibited a very extraordinarily marked and uniform wave—a wave whose symmetry has seldom been paralleled elsewhere Its variation is shown in the margin.

The following Table will show this very clearly and explain under what heads the great mortality in 1871-72 arose.

TABLE IV.

Deaths in 1871-72, *compared with ten years' average.*

—		Small-pox.	Measles.	Fevers.	Dysentery.	Diarrhœa.	Cholera.	Other diseases.	Total.	Order of salubrity.
In the year	1861-62 ...	996	27	2,182	1,307	1,048	3,751	5,162	14,478	9th
"	1862 63 ...	522	19	2,243	1,230	1,065	3,768	5,755	14,602	10th
"	1863-64 ...	187	8	2,204	1,252	865	754	5,930	11,200	2nd
"	1864-65 ...	71	5	1,916	1,025	923	472	5,466	9,878	1st
"	1865-66 ...	66	1	2,287	1,224	1,083	1,018	5,903	11,582	5th
"	1866-67 ...	173	6	2,412	1,465	957	3,268	6,360	14,636	11th
"	1867-68 ...	897	87	2,283	1,241	790	25	6,349	11,672	6th
"	1868-69 ...	443	88	2,184	904	697	2	7,258	11,526	3rd
"	1869-70 ...	24	4	2,147	924	716	629	7,083	11,527	4th
"	1870-71 ...	77	48	2,370	922	706	844	7,355	12,322	7th
	Total ...	3,456	243	22,228	11,494	8,850	14,526	62,621	123,418	..
	Average...	345·6	24·3	2,222 8	1,149·4	885·0	1,452 6	6,262·1	12,341·8	...
"	1871-72 ...	343	98	2,379	964	1,051	454	7,926	13,215	8th
	Increase...	...	73·7	156·2	...	166 0	...	1,663·9	873·2	...
	Decrease...	2·6	...	...	185·4	...	998·6	...	...	...

Measles	shows an increase of		73·7	deaths.
Fever	do.	do.	156·2	do.
Diarrhœa	do.	do.	166·0	do.
Other diseases	do.	do.	1663·9	do.

This table shows that, excluding cholera, the deaths in 1871-72 were more numerous than in any previous year during the preceding decade. The diseases named in the margin exhibit an increase on the previous ten years' average.

Measles.—The first, measles, is curious as showing how obscure causes of disease sometimes pass over a land, undetected ever and only revealed by the death-rates. Measles is very infectious, but seldom dangerous here. It will be seen by reference to Table IV. that it comes in waves of intensity, and that such a wave of perhaps unprecedented force visited Madras in 1871-72. During the first quarter of 1872 there were only 11 deaths by measles against 39 in the first quarter of 1871, so that the wave is passing from us. In the second quarter of 1871 there were no less than 59 deaths by this cause, thus making 94 deaths between January and July of 1871. The last wave of intensity visited Madras in 1867-68, but was not nearly so virulent as that of 1871. It is impossible to hazard even a guess as to what the strange cause may be which should thus tend to produce measles rather than another disease, especially as no other zymotic disease exhibits very abnormal violence. There may usually be traced in Madras a connection between measles and small-pox, as if a common cause produced both ; but in 1870 this comparison is at fault, since measles was more fatal than usual, while small-pox was less so. Notwithstanding this the action of a common wave of increase is very apparent, but measles somewhat anticipates the small-pox action. The table in the margin will show both the correspondence and its seeming failure. The former is very marked up to 1870-71. It is, however, right to add that the small-pox epidemic which was, so to speak, due in 1870, according to the measles barometer, came in 1871, and bids fair to continue

Disease.	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871
Small-pox...	996	522	187	71	66	173	897	443	24	77	343
Measles ...	27	19	8	5	1	6	87	88	4	48	98

with increasing virulence in the current year. Perhaps vaccination has pushed the small-pox epidemic back a year by protecting a large number of persons from the weaker force at the commencement of the wave.

FEVERS.—These also show an increase. The deaths have been more than in any other year of the decade except in 1866-67, but this is of comparatively little importance, seeing that the numbers are peculiarly steady. The lowest number during the decade was 1,916 in 1864-65; the highest 2,412 in 1866-67. It is, however, very interesting to remark how the increase is a part of a great wave of fever which is passing over the whole presidency. Dr. Cornish has shown this very clearly in a paper of which I quote a portion in a note below.* He has also shown that nearness to the sea in some degree mitigates the intensity of the fever influence, and this is clearly exhibited in the tables now given, for the increased deaths by fever in 1870-71 were just 7 per cent. in Madras above the normal rate, while in the inland districts it was 140 per cent. The exceedingly general nature of the increase makes it vain to look for a local cause.

—	Average of 10 years.	1870-71.	Increase.
Fevers.	2,228	2,379	151

* To return to the question of facts, it must first be shown on what evidence rest the questions of the increase and migration of malaria. In regard to the first, we offer below a statement showing the total fever mortality in this Presidency for the past four years :—

	Deaths from Fever.
1868	105,692
1869	132,346
1870	151,027
1871	193,398

These figures simply show that the fever mortality for the whole country in 1871 was very nearly double that of the year 1868. Both seasons were in some respects comparable. In the first place both years were remarkable for the general decline of cholera, and for the almost universal prevalence of small-pox. In both years there was a partial or complete failure of the north-east monsoon rains. In 1868 this failure was complete, but in 1871 the failure only extended to the northern portion of our territories. But it will be seen that, notwithstanding such a striking similarity in the climatology of the two years, there has been the evident disparity in the fever death-rates of the two seasons, 1868 and 1871. The truth is that in the past three years the malarious influences have been culminating towards a maximum. When this maximum will be reached it is impossible, with our present limited knowledge, to predict; but as the increase of fever mortality has been progressing from the districts in the north to those in the south, and as the mortality in the north has begun perceptibly to abate, we may fairly conclude that the causes of epidemic malaria are slowly passing from north to south, and that we shall find an abatement in the north before the southern districts cease to feel the influence of the epidemic wave.

In districts within the influence of the sea-board, the progress of the epidemic of malaria cannot be accurately observed. Sea air does undoubtedly repress or neutralize terrestrial miasmata, and local observers residing on the eastern or western coasts may possibly be quite unconscious of the increase of malarious disorders; still it is quite easy to show that even in districts on the eastern coast, accessible in some degree to influences from the sea, there has been a definite increase in fever mortality.

The following figures are quoted with this object :—

Fever Mortality.

Districts.	1868.	1869.	1870.	1871.
Nellore District	1,972	2,318	4,188	7,760
Chingleput District	2,096	2,631	3,821	3,916
Madras City	2,232	2,015	2,296	2,472
South Arcot	2,835	3,252	6,354	11,315
Tanjore	5,943	7,158	7,210	7,309
Tinnevelly	2,420	2,960	4,990	5,758

In every one of these districts there has been a noticeable increase of fever mortality during 1870 and 1871, more in the latter year than in the former; but in the town of Madras, immediately on the coast and in the district of Tanjore, which is peculiarly exposed to the sea, jutting into it like a promontory, the increase has been less marked than in districts like South Arcot, which contain much hilly and upland country.

But to note the influence of this fever wave at its worst, we must look to inland districts away from the influence of sea air.

We give the figures of the following districts by way of example :—

Fever Mortality.

Districts.	1868.	1869.	1870.	1871.
Kurnool	7,737	8,160	8,696	9,581
Cuddapah	7,196	9,272	10,224	14,093
North Arcot	7,491	8,454	11,159	15,381
Salem	5,771	9,271	15,658	19,501
Coimbatore	3,435	3,488	7,612	11,925
Neilgherries	......	409	397	581
Trichinopoly	2,521	2,689	6,289	9,942
Total ...	34,141	......	......	80,954

Here we are enabled to trace the southward movement of the malarial wave, for it is very evident that it affected Kurnool, Cuddapah, North Arcot, and Salem for a period of at least one or more years, before it reached Trichinopoly and Coimbatore.

We have now only to show a decrease of fever in the north during 1871 to prove our position as to a southward movement of this general epidemic wave of malaria. For this purpose we will examine the death registers of three northern districts of this Presidency, and we shall find evidence in them of a decrease of fever in the two northernmost districts coincident in time with an increase of fever mortality in the Kistna, or the most southern of these three districts.

CHOLERA.—The table in the margin exhibits the statistics of cholera during the year, and shows a great lull in the fearful action of this disease. The weekly table of deaths appended clearly shows the progress and fatality which has marked its path. It appeared in almost every week, from April to October, and then died away, there having been only seven cases in the months, October to March. It never was otherwise than sporadic, though during the seven weeks. from 29th May to 16th June, it showed every sign of becoming epidemic. Careful inquiry was made into each case, and the most earnest attention given to the disinfection of every house in which the disease appeared. Though the disease was not epidemic, it was very virulent when it appeared, and seldom has a larger proportion of deaths to attacks been met with. A very intense outbreak occurred in a stable at the back of the Memorial Hall, carrying off five persons in a few hours. But even this did not spread, and no subsequent case was reported. A number of deaths were clearly owing to the present lack of legislative control in sanitary matters. A detachment of Soldiers with their families marched to Madras along the northern road. On their way they were attacked with cholera, and a number of deaths took place on or about the very day they reached Veysurpaudy in the outskirts of Madras. The Municipal servants were there earnestly watching against the first tokens of an outbreak, and the Overseer of the district obtained early information regarding the condition of the detachment and halted the carts at the municipal limits, sending immediate information to this office. The President at once wrote to the Military authorities asking that the carts and families should not be allowed to enter the town till they were free from the disease. No heed was given to this remonstrance, and the families went on to the lines at Royapooram. Almost immediately cholera broke out in the neighbourhood and several deaths occurred Fortunately the epidemic influence was absent, and cholera did not spread. A case like this, and many others might be cited, shows how great is the need for some legal means of arresting at our borders, known centres of contagion.

—	Thirteen years' average.	1871-72.	Decrease.
Cholera...	1,452	454	998

DIARRHŒA.—This also shows an increase as per margin, and is probably akin to the increase about to be noticed. The great stress of mortality on this account is among those at the commencement and in the decline of life. This point is one that might profitably be followed up in the medical journals. To show how important a question it is, it will be well to give a ten years' average as per table on the next page. This shows very clearly how the rate increases with age, except in very old age, and then the returns are probably incorrect, seeing that a death above 80 years of age is so frequently described as from "old age." This greater liability to diarrhœa as the strength decays is more clearly shown when the deaths from diarrhœa are compared with deaths from all causes at each age.

—	Ten years' average.	1871-72.	Increase.
Diarrhœa ...	885	1,051	166

TABLE V.

Deaths by Diarrhœa at each age.

Ages.	Persons alive of these ages.	Persons dying of Diarrhœa at these ages.	Deaths per mille of living at these ages.
0 to 5	49,139	486·9	·99
5 to 10	45,276	35·8	·79
10 to 15	40,127	26·9	·67
15 to 25	72,461	59·7	·82
25 to 35	71,186	57·1	·8
35 to 45	50,203	56·4	1·12
45 to 55	34,343	65·8	1·91
55 to 65	21,031	61·6	2·83
above 65	13,786	63·9	4·63

This table exhibits a very regular advance in the intensity of the mortality by diarrhœa as age increases. It is not conclusive as other diseases also increase in power, seeing that the total deaths greatly increase with age. The following Table will show that there is a real increase as compared

Fever Mortality.

Districts.	1868.	1869.	1870.	1871.
Vizagapatam	6,812	9,226	9,757	5,077
Godavery	8,262	17,200	12,654	11,806
Kistna	2,709	3,397	6,625	8,249

Now, in regard to the tract of country just referred to, it is quite clear that meteorological, or local influences alone cannot account for the observed peculiarity in regard to fever mortality. In the year 1871 the north-east monsoon failed over the entire tract of the Northern Circars, and in two districts fever mortality steadily diminished, while in the third it steadily increased.

with other diseases from 10 years up to 55 years, with one very exceptional jump at the age of 15 to 25.

TABLE VI.

Deaths from Diarrhœa compared with total deaths.

Ages.	Deaths from all causes, average of 10 years.	Deaths from Diarrhœa, average of 10 years.	Deaths from Diarrhœa to deaths from all causes per mille.
0 to 5	4,135	486·9	117·7
5 to 10	505	35·8	70·8
10 to 15	603	26·9	44·6
15 to 25	724	59·7	82·4
25 to 35	1,224	57·8	47·2
35 to 45	1,112	56·4	50·7
45 to 55	955	65·8	68·9
55 to 65	949	61·6	65·2
over 65	2,094	63·9	30·4
Total	12,301	914·8	74·3

Here we see that while the deaths from diarrhœa, between the ages of 25 and 35, are 47 per mille of deaths from all causes, they are 50 per mille at ages 35—45, and 69 per mille between 45 and 55 years of age. In the next decade of life the rate is somewhat lower, but not more than can be accounted for from the large proportion of returns as dying from "old age."

	Ten years' average.	1870-71.	Increase.
Other diseases. ...	6,262	7,926	1,664

OTHER DISEASES.—That is, diseases which are not zymotic, or caused by miasma. It is under this head that the vast increase occurs, as per margin. The real increase is not quite so great as this would seem to show, for there has been a singularly steady increase under this head through the whole decade. This will best be seen by reference to Table VII.

With three slight exceptions we see there a steady increase of considerable proportions. In the comparatively short period of eleven years it has been no less than 53·5 per cent. or an average annual advance of 5 per cent. This progress has been so regular, at an average of about 250 deaths per annum, that such an increase in 1871-72 was to be expected and will account for 250 deaths out of the total increment of 571 deaths. This leaves unaccounted for an increase of 321 deaths, which must, I think, be ascribed to a real increase in the mortality. Before inquiring into the cause of this, it is well to consider the regular annual advance, which, in all probability, is entirely owing to improved registration.

TABLE VII.

Showing the increase of Registered deaths from "Other diseases."

—	1861-62	1862-63	1863-64	1864-65	1865-66	1866-67	1867-68	1868-69	1869-70	1870-71	1871-72
Deaths from other diseases ...	5,162	5,755	5,930	5,466	5,903	6,369	6,349	7,258	7,083	7,355	7,926

Every year recently has seen more rigid supervision of the registering agency, has accustomed the people to the requirements of the system, and has witnessed an advance in intelligent understanding of the reasons that lead the authorities to insist upon the record of all deaths. The fact that the increase is mainly under the head of "Other diseases" assists our belief, for it shows an increased knowledge of diseases and its types. Formerly the majority of deaths was ascribed to fever, because most diseases are accompanied by that symptom at one stage or another. If this view of the case be correct, we may expect the increase under this head to continue. In England the proportion of deaths from "Other diseases" is nearly four-fifths of the whole. It is a hopeful sign that in Madras the fatality from zymotic disease is steadily falling, although the improvement in the total deaths does not show itself in an equal proportion, and we may fairly conclude that the average improvement in registration is balanced by an equal improvement in the public health. For, in spite of the increased proportion of registered deaths, there is a decided downward movement in the deaths recorded, and this must be owing to a much larger diminution in the number of deaths and mainly in those from zymotic disease. This point is worthy of more detailed attention.

TABLE VIII.

Zymotic deaths compared with total deaths.

Years.	Total deaths.	Deaths from zymotic disease.	Percentage of zymotic disease to total deaths.		Average percentage of zymotic deaths in groups of years.
1861-62	14,473	9,211	64·3	4 years.	54·1
1862-63	14,602	8,847	60·5		
1863-64	11,200	5,270	47·0		
1864-65	9,878	4,412	44·6		
1865-66	11,582	5,679	49·0	4 years.	47·
1866-67	14,636	8,276	56 5		
1867-68	11,672	5,323	45 6		
1868-69	11,526	4,268	37·0		
1869-70	11,527	4,444	38·5	3 years.	39·6
1870-71	12,322	4,967	40·3		
1871-72	13,215	5,289	40·0		

This table shows the total deaths from zymotic diseases and the percentage of the latter for the past eleven years, and will require careful examination. It is at once evident that both the actual number of deaths from this cause and the proportionate part are decreasing very steadily. Dividing the period into two groups of years, five years from 1861 to 1866, and six years from 1866 to 1872, we obtain a comparison rather hard upon the second group, for while both include periods of maxima and minima, the latter has two maxima. The subjoined Table shows the improvement at a glance. The last column proves that the pressure of zymotic or preventible disease has fallen from 548 per mille to 435 per mille of total deaths :—

TABLE IX.

Zymotic deaths compared with total deaths in groups of years.

Years.	Total deaths.	Annual average.	Total zymotic deaths.	Annual average.	Average per mille of zymotic deaths to total deaths.
1861—66	61,735	12,343	33,519	6,704	543
1866—72	74,898	12,487	32,567	5,428	435

This is not given as a positive assertion that zymotic disease has lost its old power, for there may be in store for us such an outbreak as to overshadow any represented in these tables. For all practical purposes, however, the average may be accepted, since both periods include a whole wave of very similar dimensions, although the latter period seems somewhat at a disadvantage, seeing that it contains two maxima in its first and last years. If we take two 5-year periods, and omit 1871-72 which appears to open a new wave, the results run as follows :—

Period.	Average deaths from all causes.	Average deaths from zymotic disease.	Rate per mille of zymotic deaths.
1861—66	12,347	6,704	543
1866—71	12,336	5,456	442

and entitle us to assume *that the intensity of zymotic disease appears to be diminishing*, perhaps as a result of the sanitary improvement in recent years.

Before leaving this table, a further remark is imperatively necessary regarding the second column showing the annual average of total deaths in both periods. Table IX. seems to show that the total deaths are increasing in number, while those from zymotic disease are diminishing. This would be an entirely erroneous idea, even if the following table be not accepted. All the table shows is that the *recorded* deaths have increased by 136 deaths per annum. It has been shown above that the record of deaths is exhibiting an improvement of about 250 for each year, that is, supposing exactly the same number of persons really died in 1861 and 1862, the recorded deaths in the latter year would be 250 more than in the former year, owing to the registration of deaths that in the previous year would have remained unregistered. Thus supposing there had died just as many persons in 1871-72, the last year of the second group, as in 1865-66, the last year of the first group, there would have been reported 1,250 deaths more in 1871-72 than in 1865-66, and there would have seemed to be an increase of deaths to that number, although in reality there were the same number of deaths in both years. When therefore we say that the average recorded deaths in 1866—72 were 136 more than in 1865-66, we include between the means of the two periods an increase of recorded deaths as compared with actual deaths of no less than 1,250. To make the table correctly represent the real state of things we must add 1,250 to the recorded deaths in the first period, making a total of 13,647 deaths as the

average of the first period. This, compared with the average of the second period, shows that while the recorded deaths exhibit an increase of 136, the actual deaths were less in number in the second period by an average of 1,164 persons, and to something like that amount we are justified in supposing that the health of Madras has really improved. I say "something like that amount," for it is impossible to estimate such matters exactly, and we may *only* say that *there is reason to believe that the health of the city has improved during late years, but it is impossible to ascertain the exact measure of the improvement.*

2. The rate of Mortality.—It has been seen that there were recorded in 1871-72 the deaths of 13,215 persons. This, on a population of 397,552 souls, gives a death-rate of 33·2 per mille, a rate that must be considered unjustifiably high, and that calls for the most earnest action on the part of the authorities. Table X. shows how this result compares with the returns of other large cities. We learn from it that Madras holds the very unenviable position of being second in this black list, and is only less unhealthy than that nest of fever and filth, Glasgow. Birmingham was formerly one of the most unhealthy of towns, but its corporation took up the matter to good purpose and carried through a most rigid and thorough reform. The result is that Birmingham, formerly suffering from a death-rate of more than 30 per mille per annum, only loses 21·5 per mille; that is, every third life is saved now, which would have perished twenty years ago. The average mortality in a healthy country district does not exceed 17 per mille. Thus, in 1869, the mortality throughout the whole of Wales was less than 17 per mille, while in the great town of Merthyr Tydvil the rate was only 15·8 per mille. It is clear, therefore, that the normal death-rate need not exceed 20 per mille per annum, and to this standard Madras should aspire.

TABLE X.

Madras Death-rate compared with European Death-rate.

CITY.	Rate of mortality per mille in 1869.	Order.
Madras, in 1871.72	33·2	2
London	24·6	12
Berlin	31·7	3
Vienna	28·6	6
Dublin	24·	14
Edinburgh	30·3	4
Bristol	24·2	13
Birmingham	21·5	15
Liverpool	29·	5
Manchester	29.	5
Sheffield	27·6	7
Bradford	25·5	10
Leeds	26·2	8
Hull	25·4	11
Newcastle	26·1	9
Glasgow	34·3	1

To show what may fairly be expected in India, the following table will be very valuable. It exhibits the population and death-rate of so many of the great Indian cities as could conveniently be obtained. The most striking part of it is the great contrast between Madras and the sister cities of Calcutta and Bombay. Madras is now what they were ten years ago, and may, by judicious outlay and unwearied effort, be made in five years what they are now.

TABLE XI.

Death-rate in the great Cities of India.

CITY.	Mortality per mille.
Madras	33·4
Bombay	25·
Calcutta	23·7
Lahore	25·5
Nagpore	22·5
Delhi	41·3
Agra	26·3
Lucknow	25·5

It is plain that the unhealthiness of India, as far as the natives are concerned, depends entirely on filth, whether suspended in the air, in solution in the water, or covering the earth. In the following paragraphs I shall proceed to show with what positive and irrefragable evidence Madras itself proves this.

The following table shows the rate of mortality in each village within Municipal limits during the year 1871-72. It has been compiled with great care to show the relative mortality in the various districts of Madras, and with the corresponding ten years' table will enable us at once to judge regarding the health of each district. It may fairly be called a terrible table, for while the healthier districts show what might easily have been (and even then a certain excess beyond what nature intended), those at the other end of the list give the most saddening evidence of the evils that man brings upon himself by the neglect of ordinary sanitary precaution. The excess, as will be seen by the table appended showing weekly and monthly deaths mainly accrued in the weeks between April 15th and June 23rd, and is remarkable as occurring in the period which is usually the most healthy. Nor was there any apparent reason of a climatic character for the difference. Cholera certainly was not the cause, for the deaths from this disease were much under the average. The only difference of circumstance lay in a fact that was then looked upon as most fortunate—the high level of the Cooum river, caused by the influx of water from the Red Hills tank. This unusual fulness of the river appeared to me then to be an unmixed benefit, nor can the contrary be asserted now, but, reasoning after the event, it may well be that the high level of the river raised the subsoil water throughout large portions of the city to a corresponding degree, and usually subsoil water is baneful when it is near the surface. This is the only explanation I am now able to suggest, but it is necessary to admit that my present duties leave but little time to examine the subject.

TABLE XII.

Showing Deaths in Madras in 1871-72, by Villages and Divisions.

Division.	Village.	Population.	Deaths in 1871-72.	Rate per Mille.
1	Tondiarpettah	35,240	867	20·
	Washerman's Pettah	6,409		
	Monegar Choultry	426	243	570·4
	Royapooram	11,089	362	32·6
	Cassimode	12,383	268	21·6
	Total ...	65,547	1,740	26·5
2	Peddoo Naick's Pettah	65,629	2,552	38·8
	Big Parcherry	5,179	108	20·8
	John Pereira's	2,930	152	33·6
	Fort St. George	1,588		
	Total ...	75,326	2,812	37·3
3	Moottealpettah	32,062	1,657	32·7
	Uttapauliam	18,895		
	Total ...	50,957	1,657	32·7
4	Gunpowder Mills	641	4	6·2
	Perambore	5,650	327	57·8
	Veysarapaudy	3,500	141	40·2
	Total ...	9,791	472	48·2
5	Choolay	15,000	372	24·8
	Pursewaukum	19,006	1,065	56·0
	Pareamoot	11,275	210	25·6
	New Town		79	
	Vepery	4,500	151	33·5
	Poodoopettah	3,774	149	39·4
	Egmore	4,392	403	33·8
	Comaleeswaram	7,544		
	Total ...	65,491	2,429	37·0
6	Kilpauk	5,222	40	7·6
	Chetput	2,611	58	22·2
	Nungumbaukum	7,704	160	20·7
	Mackay's Garden	3,853	153	39·7
	Total ...	19,390	411	21·1
7	Poodopaukum	6,087	181	29·7
	Chintadrepettah	15,120	527	34·8
	Narasingapooram	3,046	72	23·6
	Triplicane	33,258	1,565	34·5
	Theroovateeswaranpettah	12,057		
	Total ...	69,568	2,345	33·7

Showing Deaths in Madras in 1871-72, *by Villages and Divisions.*—(Concluded).

Division.	Village.	Population.	Deaths in 1871-72.	Rate per Mille.
8	St. Thomé	20,575	745	34·3
	Alwarpettah	1,163		
	Royapettah	5,255	225	42·8
	Meer Saib's Pettah	2,050	231	31·8
	Kistnampettah	5,193		
	Tanampettah	7,246	148	20·4
	Total ...	41,482	1,349	32·5
	Grand Total ...	397,552	13,215	33·2

There was a very sudden fall in the death-rate at the beginning of the month of October, almost coincident with the change of wind into the N.E. During the whole of October the deaths were much under the average, but they rose again with November and continued high till the end of the year.

We see in the first place that the deaths per mille varied extremely—from 21·1 in the 6th Division to 48·2 in the 4th Division. In the 2nd and 3rd Divisions the average was over 37 per mille. The average of the 6th Division shows what was possible everywhere, and the death-rate need not have exceeded 21·1 per mille. This simple statement contains in it the inference that, during the year 1871-72, no less than 4,827 persons died in Madras owing to defective sanitation—that is, one life out of every three might have been saved had we good water, fresh air, and ordinary cleanliness. The great mortality in the 4th Division is owing to a local cause. The division is one great marsh, where the villages occupy ground only a little higher than the general surface. Each monsoon the water flows in from Cochrane's Canal and covers the whole district. Under ordinary circumstances the water flows off with the fall of the river, and when the bar closes there is but little left, and this soon evaporates. But in 1871-72 the Cooum was kept full for many months. Cochrane's Canal and the Cooum are connected at Chintadrepettah, and hence the water level was raised in the canal as far as the lock. One effect of this was that the Veysurapandy and Perambore marshes were under water for several months longer than usual, and this could not but disastrously affect the health of the people living near them Fevers, ague, and dysentery were very prevalent and fatal. The mortality in Veysurapaudy was upwards of three times the average, and it was more than doubled in Perambore. Here there is a distinct and direct cause for no less than 279 deaths; for 472 persons died in 1871-72 against an average of 193 persons. Immediately the locality returned to its normal condition, the death-rate fell, and up to the time of writing this report has continued low. The marshes are not in ordinary years the great evil most persons would expect, for the water is so salt that nothing will grow near it, and there is therefore no decomposing vegetable matter to poison the atmosphere. The villages are necessarily small, and are well ventilated. The sea-breeze plays over the district very freely and clears away miasmatic influences. The undoubted evils of the locality are therefore counterbalanced by several advantages, and if the water do not remain on the land longer than usual, the 4th Division is one of the healthiest in Madras.

It will be noticed that the most healthy district is Kilpauk, where the mortality was at the low rate of 7·6 per mille of the population. Nor was this much under the average, for experience proves that Kilpauk is the healthiest village in Madras. The Gunpowder Mills seems to show a better return, but the community there is so limited and so many of its employés enter the General Hospital in case of serious illness that the figures must always be exceptional. The population of Kilpauk is large, quite sufficient to give a trustworthy average. Nor is the reason of the comparative immunity of its inhabitants far to seek. The native population is scattered in small open villages. Most of its families are employed in the houses of the European dwellers in Kilpauk, and are therefore in very comfortable circumstances. To the west and south the country is entirely open, while the general surface is high, many feet above the average level of Madras. The compounds of the European houses are very large and well-drained. Well-grown trees are everywhere found. With one exception the parcherries are open and well-ventilated. Lastly, no great road runs through the village, along which epidemic disease might flow. As a result of this there is no cart-stand to act as a centre of contagion.

Tondiarpettah also occupies a high place on the health-scale and for similar reasons. It is open, inhabited by a respectable population who usually dwell in houses with large compounds, in which are generally to be seen groves of cocoanut, mango, and other trees. It is swept throughout by the sea-breeze. Parcherries are few, though not well-kept. Cart-stands are almost unknown,

TABLE XIII.

Statement of average annual deaths in each village of Madras, for twelve years ending 1870.

Divisions.	Villages.	Population.	Average deaths for 12 years, from 1859 to 1870.	Ratio per mille.
1	Tondiarpettah	35,240	} 593·8	14·4
	Washerman's Pettah	6,409		
	Monegar Choultry	426	267·8	628·6
	Royapooram	11,089	340·9	30·7
	Cassimode	12,383	215·7	17·4
	Total ...	65,547	1,418·1	21·6
2	Peddoo Naick's Pettah	65,629	2,882·8	43·9
	Big Parcherry	5,179	147·8	28·5
	John Pereira's	2,930	} 137·9	30·5
	Fort St. George	1,588		
	Total ...	75,326	3,168·4	42·0
3	Moottealpettah	32,062	} 974·8	19·1
	Uttapaulliam	18,895		
	Total ...	50,957	974·8	19·1
4	Gunpowder Mills	641	4·0	6·2
	Perambore	5,650	143·8	25·4
	Veysarapady	3,500	45·7	13·0
	Total ...	9,791	193·4	19·7
5	Choolay...	15,000	381·2	25·4
	Pursewaukum	19,006	745·9	39·2
	Pareamoot	} 11,275	{ 208·1	} 23·8
	New Town		60·7	
	Vepery	4,500	148·9	33·0
	Poodoopettah	3,774	124·3	32·9
	Egmore...	4,392	148·1	33·7
	Comalseeswaram	7,544	140·1	18·5
	Total ...	65,491	1,957·3	29·8
6	Kilpauk	5,222	49·4	9·4
	Chetput	2,611	104·6	40·0
	Nungumbaukum	7,704	367·7	47·7
	Mackay's Garden	3,853	115·7	30·0
	Total ...	19,390	637·4	32·8
7	Poodopaukum	6,087	174·2	28·6
	Chintadrepettah	15,120	655·4	43·3
	Narasingapooram	3,046	58·5	19·2
	Triplicane	33,258	} 1,619·6	35·7
	Theroovateeswaranpettah	12,057		
	Total ...	69,568	2,507·7	36·0
8	St. Thomé	20,575	} 829·3	38·1
	Alwarpettah	1,163		
	Royapettah	5,255	209·1	39·7
	Meer Saib's Pettah	2,050	} 172·6	23·8
	Kistnampettah	5,193		
	Tanampettah	7,246	169·2	23·3
	Total ...	41,482	1,380·2	33·2
	Grand Total ...	397,552	12,237·4	30·7

Turning from the mortality of 1871-72 to the average annual deaths, which alone can tell us the *ordinary* death-rate of each village, we find the results of twelve years' average in the accompanying Table XIII. Its figures are very different from those we have just seen. Here special causes are eliminated by a long average and we see each district as it is under ordinary circumstances. The districts stand in the relative order shown in Table XIV. The deaths in the 2nd Division are more

than double those in the 3rd and 4th Divisions, and nearly double those in the 1st Division. The experience of the 3rd and 4th Divisions proves that the Madras mortality ought never to exceed 19·5 per mille, for both are exposed to unnecessary risks, while neither is in even a decent sanitary condition. To this point then ought all the Municipal energies to be directed—*to ensure that the death-rate throughout Madras shall not exceed that of the 3rd and 4th Divisions.*

TABLE XIV.

Average Mortality of each Municipal Division.

Division.	Average of annual deaths per mille.	Order of Health.
1	21·6	3
2	42·	8
3	19·1	1
4	19·7	2
5	29·8	4
6	32·8	5
7	36·	7
8	33·2	6

If we now look to the geographical configuration of the city, we find three divisions facing the sea, viz., the 1st, 3rd, and 8th, while another, the 4th, is only separated from it by a comparatively open tract. Four others are cut off from the sea—the 2nd, 5th, 6th, and 7th. Of the latter, the 2nd and 7th are densely peopled; the 5th less so, while the 6th is an open country district.

Let us compare the sea-side divisions with the death-rate, as in Table XV. We see at once that the four sea-influenced districts contain all three of the healthy districts. We may therefore conclude

TABLE XV.

Mortality in Sea-side Divisions.

Divisions by Sea-side.	Death-rate.	Order of Health.
1st	21·6	3
3rd	19·1	1
8th	33 2	6
4th (see preceding para.)	19·7	2

that proximity to the sea promotes health, seeing that the pure sea air daily visits each street and house. But the remaining district, the 8th, is an unhealthy one. Why is this? It differs from the other three in one great item, there are no drains. There is not a single outlet for sewage in all the 8th Division, from the Capper House to the Adyar River. St. Thomé and its suburbs are densely populated. From Mylapore tank to the St. Thomé College the division is full of closely packed houses, from each of which proceeds a certain amount of filth. For this there is no escape. No sewer enters the sea, no drain falls into the Adyar River, or Barber's Bridge nullah Hence all filth passes into the soil or vitiates the atmosphere. St. Thomé, the chief place in this division, is an ancient city; was a city nearly 150 years before Madras was founded. Year after year the soil has deteriorated. Year after year the ground has become less able to take up and oxidize the organic matter and filth that has fallen or flowed upon it, and St. Thomé, though lying along the very beach, now loses 38 per mille of its population each year, while in the crowded 3rd division only 19 per mille die. That is, of every two persons who die in St. Thomé, one is killed by filth, and might be saved alive by due and earnest sanitary effort. Royapettah is even worse. There, and for much the same reason, 40 persons die each year per thousand of population, when only 19 need have been lost! Returning to the sea-side we find that while 19 per mille die among the close and thickly-peopled streets of East Black Town, and only 21 among the ignorant and poor fishermen who form the bulk of the population of the 1st Division, 38 persons die in St. Thomé where the sea-breeze is equally strong. The excess 17 or 19 deaths are owing to purely preventable causes, and, were the Municipality to provide sufficient funds for the necessary works, the whole of the excess deaths may, humanly speaking, be saved. In other words the question now is—which is best, that two persons should die each year where only one need die, or that in some way or other the necessary funds and powers should be provided to remedy the evils that cause the mortality?

We turn now to the inland districts as shown in Table XVI. These localities open out most inter-

TABLE XVI.

Mortality in inland Districts.

Inland Districts.	Death-rate.	Remarks.
2nd Division ...	42·	} Densely peopled.
7th do. ...	36·	}
5th do. ...	29·8	Densely peopled in parts.
6th do. ...	32·8	Country district.

esting questions. Why should the 2nd Division exhibit so fearful a rate of mortality? The answer is twofold. Its southern end, known as the "Big Parcherry," has no drains. In this place some 5,000 people dwell, of whom a large proportion are poor Portuguese Eurasians and Native Catholic Christians. Many parts are filthy in the extreme and cannot be cleansed, for there are no drains, and the streets are too narrow to permit the passage of a conservancy cart. This locality is very unhealthy, and accounts for a large number of the excess deaths. The detailed figures in Table XIII. do not show this, for it is considered a mark of poverty to live in the Big Parcherry; and when persons die, the report that reaches this office states that the death occurred in Peddoo Naick's Pettah, of which the Big Parcherry is a portion. At the other or south end of the district is a very maze of narrow streets known as Yedapolliem. The average width of the lanes here is certainly under 8 feet, and there are very many less than 6 feet. As if this were not enough the whole district is, as its name implies, the habitat of cow and buffalo-keepers, who supply the greater part of Black Town with milk. The court-yards of the houses are generally occupied by a large number of buffaloes, for whose excreta there is no means of escape. Yedapolliem is most unhealthy, and greatly swells the death-list of the 2nd Division.

But in the whole division the streets are very narrow and will not reach an average of 12 feet. When the streets were laid out in years gone by, they were of an average width of not less than 32 or 33 feet, a breadth amply sufficient for all sanitary purposes. There has, however, been the most deliberate and wilful encroachment constantly going on, not only here but in all the native parts of the town. It has been a very rare exception for a house to be built wholly on the proprietor's own ground. He deliberately erects his main wall on the edge of his land and then sets up a pyal on public ground. This represents an encroachment of about 2½ feet. If this pass, a pavement 3 feet wide is next thrown out. This is followed by the erection of a verandah up to the edge of the pavement, or 5½ or 6 feet from the main wall. Then a second pavement is stolen from the road on the pretext that it is required to support the verandah. Over this a leaf verandah or pandal is erected, the posts of which are a foot or so still further on the road. The result is that each man finally encroaches about 9 feet on the road. This is done on both sides. The 30-feet road originally laid out has meanwhile dwindled to one of 12 feet. In many streets the encroachment has exceeded the figures given above. In Thumboo Chetty, Linga Chetty, Mint, and other streets the encroachment on each side is as much as 12 or 14 feet. For very many years municipal government in this city was but a form, and was mainly in the hands of the class who made the encroachments. Hence no effort was made to stop this wholesale robbery of public land, and it is now no uncommon thing to find the whole of a house on public land paying neither quit-rent nor acknowledging any landlord. Hundreds upon hundreds of bazaars are thus entirely on public ground, by which Government, the Municipality, and the public health are alike defrauded.

Never was misappropriation more severely punished. The diminished street means less fresh air. It cribs and confines the foul air, which no breeze can reach and sweep away. That ventilation and diffusion which is Nature's means of destroying miasma and removing polluted air is almost entirely stopped, and the people who have caused the evil suffer its effects. The Hindu sees his fondly-loved child fade away or be snatched off by epidemic disease, and as he grieves, murmurs against the ill-fate that wounds him, he little knows or thinks that he and his fathers are responsible for the deed. He pays with the lives of his family and often with his own for the breach of moral and natural law. Every second death is unnecessary. One out of every two is caused by this and other violations of natural laws. In another part of this report it will be shown what efforts have been made to remedy the evil, and how bitter has been the popular feeling that unscrupulous agitators have often aroused against our action. They would rather that death should take twice its proper share of victims out of their households than that *mamool* should be disturbed.

It is not possible accurately to measure the painful results of narrow streets, but there can be no doubt that the greater part of the excess in the 2nd Division is due to this cause. Thus the districts of Choolay, Poodoopett, and Comaleeswaram correspond almost entirely in other respects with the 2nd Division, but have wider streets. Their death-rate is 24·5 per mille, while that of the 2nd Division is 42 per mille, showing a difference of 17·5 per mille as due to narrow streets. This, however, is empiric, and only entitles us, in connection with other evidence, to say that narrow streets greatly tend to enhance the death-rate.

Before concluding this portion of the subject, I will venture to give an example of what sanitary effort can perform. In Table XIII., Nungumbaukum occupies the very highest place, with a death-rate of no less than 47·7 per mille. In the statement for 1871-72 it exhibits a rate of only 20·7. This great discrepancy is the result of a gradual progress during recent years. The table below shows the death-rate in Nungumbaukum for each year since 1859:—

TABLE XVII.

Death-rate in Nungumbaukum.

Year.	Death-rate per Mille.	Death-rate in each group of three years.
1859	60·6	
1860	81·1	72·9
1861	77·2	
1862	74·1	
1863	43·6	51·5
1864	36·8	
1865	51·2	
1866	52·5	48·7
1867	42·4	
1868	22·9	
1869	13·3	18·4
1870	16·4	
1871-72	21·1	

It is well known to old residents in Madras how very abominable the servants' parcherries scattered about Nungumbaukum used to be. No care was given them, although they contained the great bulk of the population, for in Nungumbaukum there are more than ten Hindus to one European. When Colonel Temple was made President of the Municipality a determined effort was made to clean and improve these dens of filth. Colonel Denison, in 1867 and following years, did even more for Nungumbaukum, planting trees, digging side-ditches, clearing away the more wretched huts, and insisting that their owners should move into a recognized parcherry, where new roads were opened and much other good work done. We see the results above in the decreasing deaths. In the four years, 1868—72, there died annually in Nungumbaukum only one-fourth of the persons who died annually in 1859—61. The most marked progress dates from the year 1867, when the new Municipal Act enabled Colonel Denison to interfere with the necessary authority. I am not aware that there were any special conditions either in the years 1859—61 or 1868—72. With adequate means similar results might be made to appear in other districts.

The following table gives a compendious view of deaths and death-rate in each division and adds the details for each class of disease. This report has dwelt so largely on the subject of the death-rate that it is not possible to stay to consider the bearing of each item of this table. It should be carefully compared with Tables XII. and XIII :—

TABLE XVIII.

Table showing Deaths from Special and other Diseases, arranged according to Municipal Divisions.

Municipal Divisions.	1st.		2nd.		3rd.		4th.		5th.		6th.		7th.		8th.		Total. 397,552			
Population.	65,547		75,326		50,957		9,791		65,493		19,390		69,568		41,482					
VILLAGES.	Tondiar Pettah, Washerman's Pettah, Monegar Choultry, Royapooram, and Cashmode.		Peddoo Naick's Pettah, Big Parcherry, John Pereira's Garden, and Fort St. George.		Mooteal Pettah and Uttapauliam.		Gun Powder Mills, Perambore, and Vissarpaudy.		Choolay, Pursewaukum, Peresmettoo, New Town, Vepery, Poodoopett, Egmore, and Comuleeswaram.		Kilpaukum, Chetput, Nungumbaukum, and Mackay's Garden.		Poodoopaukum, Chintadrepettah, Narasingapuram, Triplicane, and Theroovateeswernpettah.		St. Thomé, Alwar Pettah, Royapettah, Meer Saib's Pettah, Kistnampettah, and Thanampettah.		Total.		Ratio per Mille per annum.	Ratio per Mille of previous years
Total Deaths from Special and other Diseases.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.		
Small-pox ...	22	19	21	21	41	34	6	3	14	35	4	3	34	28	27	31	169	174	0·8	·9
Measles ...	3	0	3	5	10	8	3	2	8	17	2	0	21	11	4	1	54	44	0·2	0·6
Fevers ...	124	215	309	337	176	200	33	26	160	285	23	24	155	151	122	119	1,102	1,277	5·9	5·6
Dysentery ...	92	73	42	41	47	38	28	24	103	99	53	44	82	78	60	60	807	457	3·1	2·3
Diarrhœa ...	49	50	173	147	86	85	22	15	80	114	35	21	55	71	17	31	517	534	2·6	2·2
Cholera ...	46	58	36	26	15	17	3	4	35	50	4	3	50	70	17	20	206	248	1·1	3·7
Other Diseases...	487	502	860	780	481	430	160	143	755	754	97	98	834	705	400	400	4,074	3,952	19·9	15·8
Total ...	822	916	1,444	1,367	856	812	255	217	1,155	1,274	218	193	1,231	1,114	647	702	6,629	9,586	33·2	31
Total of both Males & Females	1,740		2,801		1,668		472		2,429		411		2,345		1,349		13,215		...	...
Ratio per mille...	26·5		37·1		32·7		48·2		37·0		21·1		33·7		32·5		33·2		...	31

DEATH-RATE ACCORDING TO RACE.—The incidence of the mortality with regard to the race of the deceased shows a very remarkable inequality. It has been mentioned that the whole mortality in 1871-72 was very high, but the detailed figures show that the European and East Indian population were not only free from excessive mortality but were most remarkably healthy during the year. The

average deaths among the Europeans are not less than 158 per annum, but during the year 1871-72 only 106 Europeans died, just two-thirds of the ordinary number. At first sight it would seem that this comparative immunity must be owing to the fact that cholera and other special diseases were less prevalent than usual. This does account for a portion of the diminution, but for only a portion. Under the head "Other diseases," which excludes zymotic and epidemic diseases, only 80 Europeans died against an average of 101, that is every fifth life was saved during the year under the head of "Other diseases." The East Indian community showed also a marked freedom from fatal disease. "Special diseases" carried off 94 persons against an average of 146, and "Other diseases" 209 against an average of 216. Under the latter head the difference is not great. These facts show that, whatever were the causes of excess mortality in 1871-72, they were such as gained a fertile soil in native life and habitat. The Europeans, who were furthest removed from native life, suffered least, while East Indians who occupy a middle position suffered a medium rate of mortality. If we approach the subject from the other side there appears the same result. The great Mahomedan community shewed, it is true, an excess mortality, but its intensity was not nearly so great as that of the Hindus. The mortality rates may be arranged as follows :—

There died among	Europeans,	14·3	per mille of those living,		*under*	the average.
Do.	East Indians,	4·9	do.	do.	*do.*	do.
Do.	Mahomedans,	1·1	do.	do.	*over*	do.
Do.	Hindus,	2·8	do.	do.	*do.*	do.

This mode of stating the case does not, however, exhibit the full force of the difference, for is gives the proportion on those living, who are thirty fold those who die. Looking only to the deaths we learn that

The deaths among	Europeans	were	33	*per cent.*	*under*	the average.
Do.	Eurasians	do.	16·3	do.	*do.*	do.
Do.	Mahomedans	do.	3·1	do.	*above*	do.
Do.	Hindus	do.	9·2	do.	*do.*	do.

The four nations thus present a sliding scale with very considerable intervals. Europeans were most remarkably healthy, while Hindus were very unhealthy.

These figures point forcibly to some cause lying near the Hindus and remote from the Europeans, and corroborate the suspicion that the unduly high level of the subsoil water is connected with the secret. The great mass of the Hindu population lives near the Cooum and its connections—Cochrane's Canal and the Ootary Nullah. The only difficulty lies in the excess mortality among the Mahomedans, who do not, as a rule, dwell near the Cooum, except in those parts of Triplicane near the Mount Road. It is, however, worthy of remark that the most densely-peopled Mahomedan quarter is drained into the Cooum, and that the high level of the water closed the outlets of the sewers, driving the sewage back and keeping it stagnant within the drains.

The following table will show the diseases that caused deaths in 1871-72 :—

TABLE XIX.

Deaths registered in the Town of Madras for the year 1871-72, arranged according to Race and Disease causing death.

—	Europeans.		East Indians.		Hindus.		Mahomedans.		Total.		Total of both Males & Females.
	3,618		12,018		330,052		50,964		397,552		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Small-pox ...	2	1	6	5	128	149	33	19	169	174	343
Measles ...	1	1	3	1	40	35	10	7	54	44	98
Fevers ...	3	4	19	16	982	1,138	98	119	1,102	1,277	2,379
Dysentery ...	7	0	5	5	419	381	76	71	507	457	964
Diarrhœa ...	4	0	16	8	461	478	36	48	517	534	1,051
Cholera ...	2	1	4	6	158	192	42	49	206	248	454
Total of Special Diseases ...	19	7	43	41	2,188	2,373	295	313	2,555	2,734	5,289
Other Diseases ...	60	20	100	109	3,345	3,109	569	614	4,074	3,852	7,926
All Diseases ...	79	27	153	150	5,533	5,482	864	927	6,629	6,586	13,215
Death-rate per mille in 1871-72.	29·3		25·2		33·3		35·1		33·4		33·4
Mean Mortality of 10 previous years, from 1861-62 to 1870-71—											
Special Diseases ...	38·8	28·2	69·8	75·2	2,623·7	2,523·1	336·0	332·2	3,068·3	2,998·7	6,067·0
Other Diseases ...	70·2	20·4	106·0	110·9	2,678·2	2,260·3	514·8	504·0	3,369·2	2,905·6	6,274·8
Total...	109·0	48·6	175·8	186·1	5,301·4	4,783·4	850·8	836·2	6,437·5	5,904·3	12,341·8
Increase ...	......		......		989·7		54·0		873·2		873·2
Decrease ...	51·6		58·9		......		......		......		......
Death-rate per mille (11 years) ...	43·6		30·1		30·5		24·		31·		31·
Do. do. 1871-72.	29·3		25·2		33·3		35·1		33·4		[illegible]
Difference from average ...	—14·3		—4·9		+ 2·8		+ 1·1		+ 2·4		[illegible]

It has already been noticed that there is a considerable excess in the deaths in 1871-72 compared with other recent years, and this table shows very distinctly that the whole of the increase is due to Hindu and Mussulman deaths, and the figures are so surprising that we must consider them somewhat in detail They prove that during the year 1871-72 the Europeans in Madras were actually more healthy than the native population, in the proportion of 29·3 to 33·7. They reveal next that the Eurasians were more healthy still, in the proportion of 25·2 to 33·7. It is still further noteworthy that the death-rate for Europeans in Madras during 1871-72 did not exceed that of many great European cities, as shown in the table in the margin. Nor need this comparison be confined to cities only, for there are great countries in Europe which, throughout their whole population, are worse off than we were in 1871-72. Take, for instance, the three countries of Austria, Spain, and Italy, as shown in the margin. Their death-rate exceeds that of Madras Europeans in 1871-72. All three are backward countries. Superstition and *mamool* are rampant in all, and thus, by the ignorance of their people, they so forfeit their natural advantages as not to enjoy longer life than Europeans in this deleterious climate may look forward to. I have laid stress upon this subject although fully aware that 1871-72 was a singularly favourable year for Europeans, because it shows most clearly what may fairly be expected to be the rate in this city when sanitation receives due attention. The main difference has been under the head of zymotic disease, but this is almost synonymous with "preventible disease," and 1871-72 has only differed from its predecessors in that Nature cooled the atmosphere, and otherwise did for us in that year what we ought always to do for ourselves. Bountiful rains cleansed the ground, diluted our foul water, made up for the deficiency of our drains and the imperfections of those existing. Not one of the things named in the last sentence need be left to such a chance, and, humanly speaking, it may confidently be asserted that, with adequate attention and expenditure, Madras may always be maintained in that sanitary condition which marked 1871-72, without the immense disadvantage that the process, so beneficial to Europeans, should be injurious to the natives

City.	Death-rate.
Europeans in Madras, 1871-72	29· 3
Do. in Glasgow	34·31
Do. in Berlin	31·76
Do. in Edinburgh	30·34
Do. in Liverpool	29·06

Country.	Length of Average.	Average Death-rate.
Austria	1853—69	32·2
Italy	1863—69	30·2
Spain	1861—67	29·5
Madras	1871-72	29·3

This leads us on to the reverse of the picture as shown by the eleven years' average We see there that the ordinary death-rate among Europeans has been no less than 43·6 per mille per annum, nor does this quite express the whole truth, for the average includes the unusually good year 1871-72, which reduces the rate fully one per mille, so that the ten years' average was 44·6 per mille or nearly one person out of every twenty per annum. When we remember that the greater part of the Europeans here are persons in the prime of life, and that the proportion of children is very small, this heavy rate is almost appalling. One-half is probably due ultimately to a single cause—the habit of taking each day a number of small doses of ardent spirits—a practice which all authorities agree in calling self-poisoning. Dr. Mair pithily puts it: "Brandy, whiskey, gin, arrack, or any other ardent spirit must be shunned as poison, and, like all other poison, should be taken only under medical advice. Medical experience condemns them as totally unnecessary to any one in health, and yet, next to beer, if not equal to it, the most common alcoholic stimulant used in India is brandy." By indulgence in this way the constitution becomes unable to meet the demands of the climate, and death results from some immediate cause which the patient never dreams of referring to its true origin. An unusually cool season in 1871-72 warded off such effects in that year.

That Europeans who live carefully have as good, or nearly as good, a chance of life as in England is made clear by the experience of the Madras Equitable Insurance Society. This office has for a long period assured European lives. Just as the Members of Mutual Benefit Societies are the most careful and, therefore, the longest-lived persons in England, so assurers in India represent, as a rule, the careful and temperate, who feel the responsibility of families and are blessed with forethought. Hence the experience of such a Society as the Equitable is a test of the probabilities of life among the temperate and careful in India. But this Society gives the remarkable result that the cost of assurance is, after the first five years, actually less than in England for corresponding risks. The Company's regular rates are based upon the old Military Fund experience, but what may be called the "natural selection" of lives for assurance has enabled the Directors to reduce the premia by no less than 60 per cent., and on many occasions the reduction has been even greater, and 60 per cent. is a low average. Thus Mr. Bailey, the well-known Actuary, writes of the Madras Equitable Society: "A man effecting an insurance at the age of 25 for £100 pays a premium of £4 annually, which, at the expiration of five years, is reduced to £1-12-0. But the uniform European rate of the London Assurance Society at the age of 25 is £2-0-8 per cent. without profits and £2-5-0 with, and the rates of other Companies are not very different. It seems, therefore, that while a man lives in India he may, by insuring in a "mutual" Society, actually obtain lower rates than if he were in England and pay but Rs. 16 per annum when in London he would be charged Rs. 20-5-8 per annum. It is true that the rates for the first five years are higher than in England, but this is counterbalanced by the higher English rate "with profits," which is Rs. 22-8-0, the policy of the Indian Companies being to ensure that each assurer shall, while he is young and not earnest about his policy, pay something towards the "Rest Fund" which is deemed so necessary here, where a sudden epidemic may at once carry off a large number of assurers. The fund thus accumulated by the Equitable, through the operation of the high five-years' premia, is so large that, in addition to the reduction of annual premia described above, all assurers of more than a certain number of years are also entitled to a bonus of no less than one-tenth of the amount of the policy when it becomes due. I have ventured to give these details of a non-municipal body, because all authorities in Europe now look insurance data as

a most valuable test and supplement of the public mortality registers. The Equitable is a mutual Society where the rates accurately represent the Society's results, and are not mere catch-premia, to lead either to disappointment or bankruptcy. There is also an ample Rest Fund accumulating.

These very striking facts prove that "good lives" among Europeans in India are now on a par, as far as the death-rate is concerned, with "good lives" in England. All Indian Assurance Companies tell the same tale. The Albert was kept up by the profits of its Indian business for years after the English branch was hopelessly insolvent. The Universal has just declared a reduction of premia by one-half its published rates, and this reduction is but a continuation of a practice of long duration. In fact, it seems certain that life assurance in India, resting, as it does, only on good lives, may be carried on at rates actually lower than those of English Companies. In the same way, I am aware of no English Society that gives its subscribers better terms than the Madras Widows' Fund, but this is somewhat complicated from the fact that the majority of its subscribers are Eurasians, nor is it certain that the Society rests on a secure basis. Mr. Bailey's report will give much valuable information concerning this Society. With these facts before us, we may fairly assume that, with such precautions as may easily be taken, life in madras among Europeans is not necessarily subject to much greater risk than in Europe, and that the Main cause of the abnormal deaths is irregularity of living.

DEATH-RATE AMONG EURASIANS.—This is uniformly lower than among Europeans taken as a whole. It appears also to be lower than among any other class of the population, but the averages are not sufficiently extensive to allow certainly on this point. In the year 1871-72, Eurasian deaths were much less than in other races, being only 25·2 per mille. This is favourable compared with most large towns in England and Europe, but was not a fair specimen of the ordinary mortality. The eleven years' average gives a rate of 30·1 per mille, differing very slightly from the proportion among Hindus, 30·5. At present so little is known regarding the life tables of this community that I await with much interest the report of Mr. Bailey upon the Madras Widows' Fund. As, however, it is very necessary that something should be known of the mortality among this important class, it has been thought well to investigate the question somewhat thoroughly. Through the kind assistance of Father Colgan and Dr. Murphy I have been permitted to tabulate the registered deaths among Europeans and Eurasians since 1844. Leaving Europeans out of the question, no less than 7,796 deaths of Eurasians have been recorded, examined, and classified by sex and age.

The results are as below:—

TABLE XX.

Deaths ecclesiastically registered among Eurasians at each age during 26 years.

Age.	Males.	Females.	Total.	Percentage of Male deaths at each age.	Percentage of Female deaths at each age.	Percentage of total deaths at each age.
Under 3 months ...	505	384	889	12·3	10·4	11·4
" 6 " ...	151	138	289	3·7	3·7	3·7
" 9 " ...	151	115	266	3·7	3·1	3·4
" 12 " ...	109	86	195	2·7	2·3	2·5
Under 1 year ...	916	723	1,639	22·3	19·6	21·
" 2 "	493	489	982	12·	13·2	12·6
" 3 " .	194	176	370	4·7	4·8	4·7
" 4 " .	102	108	210	2·5	2·9	2·7
" 5 "	77	80	157	1·9	2·2	2·
Under 5 " ...	1,782	1,576	3,358	43·3	42·8	43·1
" 10 " ...	222	187	409	5·5	5·1	5·2
" 15 " ...	97	114	211	2·4	3·1	2·7
" 25 " ...	390	506	896	9·5	13·7	11·5
" 35 " ..	452	482	934	11·	13·1	12·1
" 45 " ..	422	258	680	10·	7·	8·7
" 55 " ...	312	190	502	7·6	5·2	6·4
" 65 " ...	226	154	380	5·6	4·2	4·9
" 75 " ...	117	112	229	2·8	3·	2·9
" 85 " ..	42	53	95	1·1	1·4	1·2
Above 85 ..	13	34	47	0·3	0·9	0·6
Unknown .	36	19	55	0·9	0·5	0·7
Total	4,111	3,685	7,796	100	100	100

This table exhibits many interesting results. It teaches in the first place that in India, as in England, the risks to which male life is exposed during the early years of life are much greater than those through which female life has to pass. Thus boys under one year of age account for 22·3 per cent. of the total male deaths, while of the deaths among females only 19·6 per cent. occurred among babies under one year old, that is, of an equal number of boys and girls who have not completed their twelfth month, about seven boys will die to six girls. In the period under review 916 boys under one year died to 723 girls of corresponding age, showing a difference of no less than 193 deaths. Some portion of this excess is due to the fact that more boys were born than girls, but at least 160 of the extra deaths are due to the greater risks that beset male life in infancy.

We may note, secondly, that the females live longer than the males, thereby following another English rule. From the age of 45 to that of 65, the deaths among females are much fewer than those among males, although more females are alive at those ages. At ages from 65 to 85 a few more women seem to die than men, according to the percentage columns, but this does not represent the facts accurately, for there are more women alive at those ages than among the men, and therefore though actually more women may die, the rate of mortality is much less. Thus 34 women died above 85 years old to 13 men. But every person must die some time, and the number dying above 85 years of age also represents the number living above that age. Only 13 men could die above that age, because only 13 men reached the age of 85. The figures therefore show that, though less females were born than males, 34 women reached the age of 85 against 13 men, and in that proportion women attain this great age.

The table shows, thirdly, an excess of female deaths between the ages of 15 and 35 In the years 15 to 25, the female deaths are 13 7 per cent. of the total female deaths, while the male deaths are only 9·5 per cent. of the total male deaths. In the years 25 to 35, the ratios are 13·1 and 11·0 respectively. These figures show a most lamentable loss of life in child-bearing, due very largely to the very early age at which maternity commences. In England the excess of deaths at these ages is very much less. But there the average female age at marriage is not less than 25½ years, while here among Eurasian women it is not more than 17 years. One one-fifth only of the females were under 21 years of age at marriage in England. Here, one-fifth of the brides were under 15 years of age. What a price in deaths is paid for the mistake made in this country! Between the ages of 5 and 10, only 187 females died to 222 males. Between 10 and 15, there were 114 female deaths to 97 male deaths. The proportionate difference of 36 deaths is mainly due to the dangers of maternity, either direct or indirect. Between the ages of 35 and 45, when child-bearing is as a rule over, the female deaths are to the male deaths as 258 is to 422. Between 25 and 35 years of age they are as 482 is to 425. The proportionate difference, or 206 deaths, is again mainly due to the dangers peculiar to women at that age. Enfeebled by early and repeated procreation, the women have no stamina to meet the perils of later births and die in very large numbers. It might be expected that the very superior advantages offered by the Lying-in Hospital, advantages that are very widely used, would do much to obviate the evils referred to above, but it is, I believe, no secret that the Hospital suffers from evils that more than counterbalance the great skill with which cases are there treated.

The proportion of deaths under one year of age does not appear large when compared with the English figures. The tables drawn from the Ecclesiastical Registers will not afford trustworthy information on this point.

To show what proportion this mortality bears to those living, we must again revert to the deaths recorded by this department. The figures in Table XXI. are those for the past eleven years and give an average sufficiently large to be trusted, except in the yearly ages under 5. It is very plain there is an error in the population column, seeing that more persons are said to be four years old, than those said to be three years old, and many more than the number registered as two years old. Unless there had been some frightful and extraordinary mortality among very young children during the last two years, which there has not been, it is utterly impossible that there should be more persons alive of the older ages than of the younger. The returns prove great ignorance among the Eurasian poor. Above 5 years the returns are steady and according to rule, and the comparatively large number between 10 and 15 years is accounted for by the fact that Eurasian youths are sent to Madras from all parts of the Presidency to be educated. It should be added, however, that the irregularity in ages under five years is noticed in European countries almost as strongly as here, and is owing to the same cause—the fondness of parents for their children leading them to look forward to the next birthday rather than back to the last. Thus the English Census of 1841 gave the returns in the margin, where there is an inaccuracy as marked, though not nearly so great as that given above.

Under 1 year,	... ...	427,601
„ 2 years,	... ...	427,996
„ 3 „	... ...	435,413
„ 4 „	... ...	408,332
„ 5 „	... ...	399,840

In 1861 the returns were also very defective, being incorrect in the proportions shown in the margin In the English Census and Mortuary Returns corrections are always applied, but in our case I deem it best to give the exact figures also on this the first occasion of the use of such tables, so that every thing may be within the reach of the ordinary student.

Under 1 year,	2,342,	too few.
„ 2 years,	22,925	do.
„ 3 „	11,128,	too many.
„ 4 „	18,204	do.
„ 5 „	24,786	do.

TABLE XXI.

Eurasian Death-rate by Ages, compared with English Death-rate.

Age.	Eurasian Population.	Annual average of Eurasian deaths.	Death-rate per mille of each age.	English rate per mille.
Under 1 year ...	234	109·3	467·1	165·4
„ 2 years ...	334	20·7	61·9	55·5
„ 3 „ ...	408	11·2	27·4	36·1
„ 4 „ ...	410	7·6	18·5	24·8
„ 5 „ ...	391	10·3	26·3	17·9
Under 5 years ...	1,777	159·3	89·6	67·4
Under 10 years ...	1,691	14·2	8·5	8·7
„ 15 „ ...	1,613	40·1	24·8	5·
„ 25 „ ...	2,584	41·1	15·9	8·
„ 35 „ ...	1,593	28·6	17·9	10·
„ 45 „ ...	1,158	23·3	20·1	12·6
„ 55 „ ...	818	24·4	29·8	16·9
„ 65 „ ...	478	22·6	47·2	30·
Over 65 „ ...	301	27·5	91·3	198·
Total...	12,013	381·4	......	......

But it is apparent that inferences drawn from erroneous figures must be themselves erroneous, and therefore the per-centage given in the above table is not trustworthy. Before entering into any argument as to the mortality, it is necessary to correct the table, and this is done below, where the persons under 5 years old are divided as the mortality teaches us must be the real proportions. The mortality records of the Eurasian community are fairly accurate with regard to age, as the notice of death is usually signed by a medical officer or subordinate, and there can be little risk in accepting their evidence. The table contains the real number of persons living under 5 years of age and only distributes them as we know they must have occurred according to the physical laws of nature. Only the figures below 5 years of age are corrected, the higher ages being subject to other variations besides those of mortality and are evidently very near the truth, except in the items 5 to 10 and 10 to 15 years, where it is certain that there are many persons entered as under 10 years old, when in reality they were over ten.

TABLE XXII.

Corrected Eurasian Death-rate under 5 years of age.

Age.	Corrected Eurasian Population.	Average annual Eurasian deaths.	Death-rate per mille of each age.	English death-rate per mille of each age.
Under 1 year ...	462	109·3	236·5	165·4
" 2 " ...	352	20·7	58·8	55·5
" 3 " ...	331	11·2	33·8	36·1
" 4 " ...	320	7·6	23·7	24·3
" 5 " ...	312	10·3	33·	17·9

The table just given exhibits a rate of infant mortality that is very distressing. The subsequent ages prove that the climate is favourable to children, for the mortality is not greater than in England, and indeed is somewhat less. Medical officers are, I believe, unanimous in declaring that Madras is an unusually healthy place for children under 5 years, and European children, when properly cared for, may be reared as a rule exceedingly easily. To what then may be ascribed the heavy mortality among very young Eurasian children, so that one out of every four dies before enjoying one year of life? There can be little doubt as to the answer. The excessive mortality is mainly owing to the youthful age of the mothers, who are frequently married as soon as they reach puberty and long before they are strong or wise enough for the duties of maternity. Hence the natural food of children is deficient. Nurses are too expensive for any but the well-to-do, and the recognized infants' artificial foods are also beyond the reach of the poor. Hence the little ones, weakly when born, are made to eat oppams, rice and curry long before they can digest solid food. The natural result follows—convulsions, atrophy, and other diseases carry large numbers off. This point is so important that I venture to extend this report by inserting a table showing the ages of all Protestant Eurasians who married in the years 1845, 1855 and 1865, which Dr. Murphy kindly permitted me to abstract from his registers. The greater number of Eurasians, especially those of the poorer class, who marry earliest, are Roman Catholics, and therefore the marriage table given below, sad as it is, does not fully represent the evil.

TABLE XXIII.

Showing the ages of Protestant Eurasian brides and bridegrooms during the years 1845, 1855, *and* 1865.

Wife's Age.	Under 18	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	Over 55	Total.	
12	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	Bride's age 12 to 16 years—305.
13	...	...	1	...	2	3	2	2	1	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14	
14	...	2	2	3	7	7	4	8	5	8	2	2	4	2	...	3	1	1	1	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	66	
15	...	...	2	4	12	8	10	10	19	3	6	7	3	2	2	3	1	2	1	...	2	...	1	...	...	...	1	1	2	...	...	...	...	...	...	...	...	...	...	...	102	
16	...	...	2	9	8	15	10	6	21	6	4	8	5	4	3	1	4	5	...	3	...	...	1	2	1	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	121	
17	...	...	1	8	9	4	15	8	9	7	7	3	1	6	...	...	3	2	...	1	2	...	...	...	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	90	Bride's age 17 to 21 years—342.
18	...	...	1	4	4	8	12	12	12	8	2	4	2	5	2	5	3	3	2	1	...	4	1	1	...	2	...	...	2	...	...	1	...	2	...	...	...	...	...	...	103	
19	...	...	1	...	7	4	4	8	8	7	2	3	6	1	2	2	...	1	...	...	...	...	1	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	60	
20	1	...	...	...	1	5	3	4	7	6	2	3	1	5	...	3	1	...	3	...	1	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	50	
21	...	...	...	2	4	2	6	2	3	1	3	2	...	1	...	3	2	1	1	...	...	2	...	1	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	39	
22	...	...	...	...	3	4	2	2	3	3	2	2	1	1	...	1	3	...	...	2	3	...	...	...	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	35	Bride's age 22 to 26 years—129.
23	...	...	...	...	1	1	3	3	3	...	5	3	3	1	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	27	
24	...	...	...	2	...	...	1	1	1	1	...	1	1	3	1	1	1	1	...	1	...	...	...	1	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	20	
25	...	...	...	...	1	...	1	...	1	2	3	2	4	4	3	...	...	...	2	1	...	1	...	1	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	1	30	
26	...	...	...	...	...	...	...	...	5	...	2	3	...	...	1	1	...	...	1	...	...	...	...	1	...	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	17	
27	...	...	...	...	1	...	...	1	1	1	2	...	3	...	1	1	...	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	15	Bride's age 27 to 31 years—65.
28	...	...	...	...	1	...	2	1	...	...	1	2	...	1	...	2	...	...	...	...	...	1	...	1	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	15	
29	...	...	...	...	...	...	...	1	...	2	1	...	...	...	...	...	...	1	...	1	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	11	
30	...	...	...	...	...	1	...	...	...	1	1	...	2	2	...	...	...	1	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	13	
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	1	...	...	1	...	...	1	...	1	...	...	...	...	1	1	...	...	...	...	1	...	...	11	
32	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	1	...	...	...	...	1	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	9	Bride's age 32 to 36 years—25.
33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3	
34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
35	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	1	7	
36	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	4	
37	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	Bride's age 37 to 41 years—13.
38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	2	
39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	4	
40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	3	
41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	Bride's age over 42 to 8.
43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	0	
45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	3	
Over 45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	
Total.	1	2	10	32	61	62	75	69	99	60	47	45	36	41	18	32	21	21	14	18	10	9	11	14	7	13	7	6	8	3	1	6	3	7	1	...	2	3	1	11	887	
	Husband's age under 18 to 21 years—106.					Husband's age 22 to 26 years—365.					Husband's age 27 to 31 years—187.					Husband's age 32 to 36 years—106.					Husband's age 37 to 41 years—51.					Husband's age 42 to 46 years—37.					Husband's age 47 to 51 years—18.					Husband's age over 52 to 17.						

We learn from these tables that the great bulk of the Eurasian women are married before they have ceased to be girls in strength of body and mind. Out of 887 brides no less than 558 were under 20 years of age, while upwards of half were under 18 years, and some even as young as 12 years. One-tenth of the brides were 14 years old and under. My impression is that the Roman Catholic brides will average a year younger and present very many marriages at 13 years old. With mothers not more than 14 or 15 years old, what can be expected but puny sickly children; and when such babies are ill-nourished and to a large degree deprived of their natural food, it is not surprising that they die in large numbers.

If a Eurasian child can escape this dangerous period, he runs no great risks till he reaches the age of 15 years, when the rate of mortality immensely increases and continues high till old age is reached. The following ratios, however, can scarcely be right:—

Under 10 years of age the death-rate is 8·5 per mille.
Do. 15 do. do. 24·8 do.

It has already been pointed out that there must be some error here, although there really is a great difference. The mistake arises from 10 being so convenient a number that large numbers of parents who are not sure of the age of their children say their age is 10 years, when in reality they are not of that age. This will not affect the census figures, as such children will still be in their right group, but it greatly affects the death reports, where an average of 14·2 deaths is manifestly below the mark, while that of 40·1 for those between 10 and 15 is much above it. I propose to correct these as follows but it should be understood that the correction is based on analogy of other tables rather than on exact knowledge.

TABLE XXIV.

Corrected Eurasian Death-rate for all ages.

Age.	Eurasian Population.	Annual average of Eurasian deaths.	Eurasian death-rate per mille of those living.	English death-rate per mille of those living.
Under 1 year.	462	109·3	236·5	165·4
„ 2 years.	352	20·7	58·8	55·5
„ 3 „	331	11·2	33·8	36·1
„ 4 „	320	7·6	23·7	24·3
„ 5 „	312	10·3	33·	17 9
5 to 10 „	1,691	26·2	15·5	8·7
10 „ 15 „	1,613	28·1	17·4	5·
15 „ 25 „	2,584	41·1	15·9	8·
25 „ 35 „	1,593	28·6	17·9	10.
35 „ 45 „	1,158	23·3	20·1	12·6
45 „ 55 „	818	24·4	29·8	16.9
55 „ 65 „	478	22·6	47·2	30·
Over 65 „	301	27·5	91·3	198·

The deaths shown by this table are very numerous between the ages of 15 and 65, and present the spectacle of a whole race subject, in the prime of life, to a mortality which in England only accompanies age with its many burdens; and no one can study the table without feeling how great need there is for improvement in the conditions of life among the Eurasians of this city. How few attain old age? In England there are 1,821,455 persons above 65 years of age to 445,961 persons under one year, or four times as many. In Madras there are but a little more than 301 Eurasians above 65 years to 462 under one year. Had the English ratio prevailed here there would have been 1,887 persons above 65 years, and there are but 301! If we take another period of life the results are equally startling. Thus, in England there are 1,821,455 persons above 65 years to 1,783,240 between 5 and 10 years. If we apply the same rule to Madras for the same periods of life we find there ought to be 1,726 grey-haired men of 65 years and upwards; there are but 301! This great mortality in the prime of life must react on the whole community, leaving an enormous proportion of young children unprovided for, not armed for the battle of life but left to sink into poverty and shame. It has often been said that statistics are "dry," but what human talent could indite more pregnant sentences, more weighty and important truths, than appear in the facts revealed above?

We see, then, that the Eurasians of Madras are subject to great risk in the first year of life, and again during their early and mature manhood. It will be interesting and profitable to conclude this analysis of Eurasian deaths by comparing the death-rate of their children under five years of age with that of various European countries, including the most diverse in climate, prosperity, and condition.

Average annual rate	of mortality	of children	in Norway	... 4·09	per cent.
Do.	do.	do.	Sweden	... 5·14	„
Do.	do.	do.	Denmark	... 5·27	„
Do.	do.	do.	England	... 6·76	„
Do.	do.	do.	Belgium	... 7·49	„
Do.	do.	do.	France	... 7·92	„
Do.	do.	do.	Prussia	... 8·24	„
Do.	do. Eurasian	do.	MADRAS	... 8·96	„
Do.	do.	do.	Holland	... 9·12	„
Do.	do.	do.	Austria	... 10·40	„
Do.	do.	do.	Spain	... 11·17	„
Do.	do.	do.	Italy	... 11·35	„

But, as we have seen, the stress of infant mortality among Eurasians in Madras is in the first year, and the subsequent three years exhibit a very good average. It is therefore well to compare the deaths in the first year. I am not able to do this with all the countries just given.

Average annual mortality among children under 1 year in			Denmark	...	13·75 per cent.
Do.	do.	do.	Sweden	...	14·18 „
Do.	do.	do.	England	...	16·54 „
Do.	do.	do.	France	...	22·32 „
Do.	do.	do.	Madras	...	23·65 „
Do.	do.	do.	Holland	...	23·75 „
Do.	do.	do.	Spain	...	24·96 „
Do.	do.	do.	Italy	...	27·33 „

Let us look at this great fact from another side—the numbers that reach the age of five years and the number of those born who die before they attain that age.

TABLE XXV.

Comparative Statement showing number of Children born that live to five years of age in various countries.

Country.	Number born.	Number reaching five years of age.	Number dying before five years of age.	Ratio of unnecessary deaths.
Norway	100	83	17	...
Sweden	100	80	20	3
Denmark	100	80	20	3
England	100	74	26	9
Belgium	100	73	27	10
France	100	71	29	12
Prussia	100	68	32	15
Madras	100	68	32	15
Holland	100	67	33	16
Austria	100	64	36	19
Spain	100	64	36	19
Russia	100	62	38	21
Italy	100	61	39	22

We have seen that the Madras Eurasian mortality of children is to the mortality in England as 23 is to 16, and that between 2 and 5 years old, Eurasians in Madras have as good a chance of life as English children. But the English death-rate is much higher than need be, as the following table will clearly show:—

Deaths among children of 0 to 5 years of			Clergymen, Peers, &c., in England		10 per cent.
Do.	do.	do.	of all classes in healthy rural districts,		18 do.
Do.	do.	do.	do.	in 30 large towns,	36 do.

It is the latter item that so swells the list, and is due to parental neglect, deficiency of food, dirty, ill-ventilated houses, and the other evils of poverty in large towns.

I have entered into these details regarding the Eurasian community, be cause it is highly desirable that the public should have an accurate knowledge of some of the greater laws of life. The growth of Life Assurance and Benefit Societies has been greatly impeded by the lack of the trustworthy information on which all life-tables must be founded in order to give security to assurers. Should it fall to my duty to prepare other annual reports on the mortality of Madras, it is proposed each year to analyze the results exhibited by one section of the community, so that in three or four years full information will be available regarding every class of the population, and yet the reports themselves will not be unduly bulky. It should, however, be understood that the details given above are rather tentative than final, for every table has had to be specially designed and calculated for this report, seeing that there were no life-tables previously in existence, and it is only natural that further experience and more refined calculations may require corrections to be made on account of conditions not yet observed or duly valued.

Death-rate among Hindus.—The great majority of the Hindu population are so hazy about age, so frequently know absolutely nothing of the duration of their own lives, and when called upon to give the best approximate return, make such gross and palpable errors that it is impossible to accept as accurate either the Census or Mortality Returns on this point. In fact it is perfectly certain that the ages of children, where the groups consist of single years, are inaccurately given. The Census Returns ought to show a constantly decreasing number of persons in each year of life, and in mature years where the groups are composed of years grouped so as to meet this very difficulty, and an error of considerable magnitude will not vitiate the return, there is this decreasing ratio. Among children, however, this is not the case, and it is evident that in a host of returns ages have been over-stated. The same remarks apply to deaths, although the error is not apparent, since the death-rate decreases in a very much greater ratio than the number of persons at each age. The following table will, however, give the facts as they appear.

TABLE XXVI.

Showing the death-rate among Hindus.

Age.	Hindu Population as per Census.	Average annual deaths of Hindus.	Corrected Hindu Population.	Hindu Death-rate per mille of living.	English Death-rate per mille of living.
Under 1 year ...	4,279	2,732·0	12,671	215·6	165·4
„ 2 „ ...	9,478	409·5	9,939	41·2	55·5
„ 3 „ ...	9,402	300·2	9,530	31·5	36·1
„ 4 „ ...	9,700	221·3	9,229	24·	24·3
„ 5 „ ...	8,480	415·7	9,008	46·1	17·9
Under 5 years ...	41,339	4,078·9	50,377	81·	67·4
Under 10 years ...	37,846	529·9	34,649	15·3	8·7
„ 15 „ ...	32,863	579·	31,396	18·4	5·
„ 25 „ ...	60,408	949·6	61,408	15·4	8·
„ 35 „ ...	59,782	903·2	53,350	16·9	10·
„ 45 „ ...	42,048	791·9	42,048	19·	12·6
„ 55 „ ...	28,392	776·4	28,392	27·3	16·9
„ 65 „ ...	17,151	707·6	18,209	38·8	30·
Over 65 „ ...	11,133	1,046·3	11,133	94·	198·
Total ...	3,30,962	10,363·0	3,30,962	....	....

Death-rate among Mahomedans.—Very similar remarks apply to Mahomedans, and I will therefore give the table as it stands :

TABLE XXVII.

Showing the death-rate among Mahomedans.

Age.	Mahomedan Population.	Mahomedan Deaths.	Corrected Mahomedan Population.	Death-rate per mille.	English Death-rate.
Under 1 year ...	371	399·7	1,481	269·9	165·4
„ 2 „ ...	1,327	68·3	1,147	59·5	55·5
„ 3 „ ...	1,252	47·9	1,091	43·9	36·1
„ 4 „ ...	1,286	39·2	1,051	37·3	24·3
„ 5 „ ...	1,353	52·9	1,018	52·	17·9
Under 5 years ...	5,589	608·	5,788	105·	67·4
Under 10 years ...	5,418	73·5	5,549	13·2	8·7
„ 15 „ ...	5,386	95·1	5,281	18·	5·
„ 25 „ ...	8,855	188·3	9,012	20·9	8·
„ 35 „ ...	8,818	166·6	8,129	20·5	10·
„ 45 „ ...	6,497	120·5	6,463	18·6	12·6
„ 55 „ ...	4,849	138·3	5,160	26·8	16·9
„ 65 „ ...	3,268	159·1	3,298	48·2	30·
Over 65 „ ...	2,284	268·5	2,284	117·5	198·
Total ...	50,964	1,818·0	50,964		....

I have now gone through all the races represented in Madras in numbers sufficient to give them importance, and the following table will at once show the results in each. It is to be observed how little they deviate from the sliding scale represented by the following order—Eurasians, Hindus Mussulmans, Europeans.

TABLE XXVIII.

Death-rate per mille of each Nationality.

Age.		Hindus.	Mussulmans.	Eurasians.	Europeans.	In England.
Under 1 year.	...	215·6	269·9	236·5	341·3	165·4
" 2 years	...	41·2	59·5	58·8	97·7	55·5
" 3 "	...	31·5	43·9	33·8	30·3	36 1
" 4 "	...	24·	37·3	23·7	33·7	24·3
" 5 "	...	46·1	52·	33·	31 5	17·9
5 to 10 "	...	15·3	13·2	15·5	10 6	8·7
10 to 15 "	...	18·4	18·	17·4	25·3	5
15 to 25 "	...	15·4	20·9	15 9	39 7	8·
25 to 35 "	...	16 9	20·5	17 9	25·	10·
35 to 45 "	...	19·	18 6	20·1	48 8	12 6
45 to 55 "	...	27·3	26·8	29·8	36·6	16·9
55 to 65 "	...	30·8	48·2	47·2	42·4	30·
Over 65 "	...	94·	117·5	91·3	67·5	198·

Births in 1871-72.—It is much to be regretted that no accurate return of births can be given. The municipality is bound to register all births under the following Sections of Act IX. of 1867.

Commissioners to keep a register of births and deaths and appoint Registrars.

218. The Commissioners shall keep in their office a register of all births and deaths in the Town, and for this purpose they shall divide the Town into such and so many districts as they shall think fit, and for every such district they shall appoint a person to be Registrar of Births and Deaths within such district.

Every Registrar to live in his district; list of Registrars to be published, &c.

219. Every Registrar shall reside within the district of which he is Registrar, and shall cause his name, with the addition of Registrar of Births and Deaths for the district for which he shall be so appointed, to be placed in some conspicuous place on or near the outer door of his own dwelling house; and the Commissioners shall cause to be printed and published, a list containing the name and place of abode of every Registrar of Births and Deaths in the Town.

Commissioners to have Register Books prepared and numbered.

220. The Commissioner shall cause to be prepared and print a sufficient number of Register Books for making entries of all births and deaths which may take place in the Town, according to the forms prescribed in Schedules K and L to this Act annexed, and the pages of such book shall be numbered progressively from the beginning to the end.

Registrar to inform himself of, and register births and deaths.

221. Every Registrar shall inform himself carefully of every birth and of every death which shall happen in his district after this Act comes into operation, and shall learn and register, as soon as conveniently may be after the event, without fee or reward, the particulars required to be registered, according to the forms in the said Schedules K and L respectively, touching every such birth and every such death, as the case may be, which shall not have been already registered, every such entry being made in order from the beginning to the end of the book.

Information of birth to be given within one week.

222. The father or mother of every child born in the Town, or, in case of the death, illness, absence, or inability of the father and mother, some person who was present at, or in attendance during the child-birth, shall, within one week next after the day of every such birth, give information to the Registrar of the District, according to the best of his or her knowledge and belief, of the several particulars hereby required to be known and registered touching the birth of such child. Any person whose duty it shall be to give information to a Registrar under this Section, who shall refuse or neglect to give such information, shall be liable to a penalty not exceeding one hundred Rupees for each offence.

Information of death how to be given.

223. Some one of the persons present at the death, or in attendance during the last illness of every person dying in the Town, or in case of the death, illness, inability or default of all such persons, the occupier of the building or tenement, or in case the occupier be the person who shall have died, some inmate of the building or tenement in which such death shall have happened, shall, within eight days next after the day of such death, give information to the Registrar of the District according to the best of his or her knowledge or belief of the several particulars hereby required to be known and registered touching the death of such person It shall also be the duty of every person who is conducting or performing the funeral ceremonies of any person who has died within the Town, when required, to furnish to the Registrar, or to any person authorized by him, such information as he may possess in relation to the said several particulars. Any such person who shall neglect or refuse to give such information, shall be liable to a penalty not exceeding one hundred Rupees.

Person giving information to sign the register.

224. Every person by whom the information contained in any register of births or deaths under this Act shall have been given, shall, if he can write, sign in the register his name, description, and place of abode, and if he cannot write, shall put his mark in the Register to his name, description, and place of abode; and no such registration shall be deemed to be complete or of any effect until such person shall have so signed or put his mark to it.

Enumeration of inhabitants.

225. At such time and in such manner as shall be directed, from time to time, by the Commissioners, with the sanction of the Government, an enumeration shall be made of the persons who at the time of making such enumeration shall be within the Town: Provided always, that one clear month previous to such enumeration being commenced, notice of the intention to make the same, with the date or dates upon or within which it is intended to be made, and all other necessary particulars, shall be published in the

Fort Saint George Gazette, and in such English and Vernacular newspapers in Madras as to the Government shall seem fit.

226. The Commissioners shall superintend the taking of such enumeration, and shall appoint such Enumerators, and make such arrangements generally as may seem to them necessary for the purpose of such enumeration, and all expenses incurred in respect of such enumeration shall be defrayed out of the Municipal Fund.

Commissioners to superintend the enumeration.

227. Each enumerator or other subordinate Officer appointed under this Act shall, agreeably to his instructions, leave at each building or place of residence within his district, four days at least before the time appointed for the collection of the completed Returns or Census, a blank Schedule or Return, to be of such form, and containing such particulars as the Government may approve to be duly filled up and signed by the owner, tenant, or principal occupants of the said building or place of residence.

Delivery of Schedules and Returns.

228. Any person wilfully neglecting or refusing correctly to fill up and affix his signature or mark to any such Schedule or Return so left at his place of residence, or who shall neglect or refuse to return the same to the Enumerator or other Officer when called upon so to do, or to furnish the necessary information to an Enumerator to fill up the same for him, if he do not know how to write, shall be liable to a penalty not exceeding two hundred Rupees, and may also be detained in custody until he shall have correctly filled up and signed, or affixed his mark to the said Schedule or Return : Provided that it shall be the duty of the Enumerator, if required, to fill up all Schedules or Returns for those who are unable to write.

Occupier of building, &c., to furnish required information.

Proviso.

It is necessary at once to admit that the organization thus created has not worked efficiently, nor can it, while the law compels the registrar to have his office in his own house as provided in Section 219. The salary attached to the office of registrar can never be sufficient to induce well-known individuals to accept the post. The registrars live in poor districts where the street names are almost entirely unknown to persons not living on the spot. What information is given to the 65,000 people living in the 5th Division when they are told that the registrar lives and has his office at No. 57, Ootoocattan Street, New Town, or to the 70,000 people of the 7th Division that the registrar lives in some obscure street in Chintadripettah. Before holding the Office concerning whose duties I now report, I personally made many and earnest enquiries as to the whereabouts of the registrar and entirely failed in finding him. No European can find the registrar, nor are the natives able to do so without much trouble. Thus in the year under report only one European birth was reported in Teynampett, only four in Nungumbaukum and not one in Fort St. George ! It is true that Section 222 imposes a penalty for the non-report of births, but the municipality has never thought it right to prosecute, nor can any magistrate be expected to convict a defaulter as matters now stand. Experience teaches us that out of a population of 397,552 souls there ought to have been about 14,120 Births. Of these, 8,264 were reported and registered during the year, excluding still-births. The order is that so many were registered, not so few, and indeed we were compelled to break the law to gain these results. The registrars were, as far as possible, removed to some well-known spot or public office. Thus one was placed in the Municipal office, another at the office of the Commissioner of Police, a third at the Round Tannah. They were also called upon to spend the morning of each day in making personal enquiries at each house in their divisions. The following table gives the result of these efforts :—

TABLE XXIX.

Showing the Births registered in each month of the year for each nationality.

	Born Alive.														
—	Europeans.			East Indians.			Hindus.			Mahomedans.			Total.		
	M.	F.	Total.	M.	F.	Total	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
April 1871	3	7	10	10	17	27	355	257	612	33	24	57	401	305	706
May ,, ...	2	2	4	15	17	32	316	268	584	33	31	64	366	318	684
June ,, ...	6	2	8	19	23	42	433	385	818	48	32	80	506	472	978
1st Quarter Total...	11	11	22	44	57	101	1,104	910	2,014	114	87	201	1,273	1,065	2,338
July 1871 ...	6	6	12	11	9	20	370	293	663	46	26	72	433	334	757
August ,, ...	2	3	5	17	17	34	413	338	751	33	25	58	465	383	848
September ,, ...	2	4	6	14	37	51	309	296	605	28	26	54	353	363	716
2nd Quarter Total...	10	13	23	42	63	105	1,092	927	2,019	107	77	184	1,251	1,080	2,331
October 1871 ...	11	6	17	24	32	56	313	249	562	28	30	58	376	317	693
November ,, ...	1	2	3	9	18	27	288	248	536	18	20	38	316	288	604
December ,, ...	9	7	16	11	20	31	222	207	429	25	16	41	267	250	517
3rd Quarter Total...	21	15	36	44	70	114	823	704	1,527	71	66	137	959	855	1,814
January 1872 ...	4	6	10	20	11	31	233	200	433	24	17	41	281	234	515
February ,, ...	2	2	4	14	5	19	300	260	560	30	20	50	346	287	633
March ,, ...	3	8	11	22	14	36	308	237	545	24	17	41	362	271	633
4th Quarter Total...	14	11	25	56	30	86	841	697	1,538	78	54	132	989	792	1,781
Grand Total...	56	50	106	186	220	406	3,860	3,235	7,098	370	284	654	4,472	3,792	8,264

No real approximation to an accurate registration of births without a radical alteration of the present system. The Office of Registration must be well known and convenient of access, else it is in vain to expect the people to register their domestic occurrences. During the year I submitted to Mr. Loch a plan for the establishment of an "office for public purposes" in each division to be situate in the most central and public spot, and to contain the following offices:—Municipal Overseer; Registrar of Births and Deaths; Divisional Post Office; Divisional Tannah. The scheme has not taken a palpable form for want of means, but has, I believe, received the approbation of the Commissioner of Police and the Postmaster-General. The combination of these offices in one building would be very economical, would ensure that every man and woman should know their situation, and would make it very easy for the public to be informed of any new Regulation or Act. I would also locate the Vaccination Office there, and in time a District Telegraph Office. Eight such buildings could, I am informed, be erected for about Rupees 60,000, and the Municipal share would not exceed Rupees 20,000 probably. We now spend Rupees 4,368 each year on the present almost useless registration. With such a central office as has been described, half of this cost might be saved, seeing that now we have to pay the Registrars a far larger salary than need be given, than to recompense them for the use of their houses. We should obtain accurate registration at this greatly reduced cost, and the annual saving would far more than cover the interest on the initial outlay. At present the money is spent in gaining that which is of no service when it is obtained. It is believed that Dr. Cornish also cordially approves of the plan proposed above.

The table is so manifestly incomplete that no profit can result from its examination in detail.

CAUSE OF THE HIGH DEATH-RATE.—This resolves itself into two questions—

1.—The cause of the unusually high rate in 1871-72.
2.—The cause of the ordinary high rate.

The cause of the increased deaths in 1871-72 is discussed in an earlier part of the report, and was, I imagine, chiefly due to the abnormal height of the sub-soil water, which induced a general excess of those diseases specially influenced by dampness of the soil. This, however, is a point rather for the consideration of the Sanitary Commissioner, as the excess may also be due, and undoubtedly is in some degree, to causes which are general rather than local, and from which Madras may have suffered in common with large areas of country.

When we turn to the cause of the ordinary high rate of mortality, there is less difficulty, for the reason is patent and may be summed up in one sentence—we suffer now the results of continued neglect of the most ordinary rules of sanitation. There are three main laws to which most of the details of the science are mere corollaries.

To ensure health:—

1. We must have pure water.
2. We must have pure air.
3. We must at once carry away or destroy all filth, especially that which results from animal excretion and vegetable decomposition.

Every one of these rules has been persistently neglected and defied, except that, during the last three years, a great effort has been made to ensure supply of pure water. These efforts have not yet had any influence upon the health of the city, as the supply had not commenced before March 31st, 1872, but the works are so far advanced, and their experimental trial has been so successful, that there is every reason to believe that the greater part of the town will be supplied before the end of the current year. I look forward with much pleasure to this great end, and will venture to predict that within six months of the supply of pure water to any town district the death-rate will show a material improvement. In dealing, however, with the public health *up to this time*, it is necessary to assert that the quality of the water used by the people has steadily deteriorated, with corresponding injury to the public health. The demands made upon the fresh water stratum have been more than it could meet, and the deficiency has been supplied by a steady influx from the lower brackish waters, which have been drawn upwards by the diminishing pressure above. In this way a very large proportion of the wells which, twenty years ago, gave good water are now brackish, and many that were then brackish are now so salt as to be unfit for any domestic purpose. The water commonly used in many districts is bad in the extreme. In fact the standard of potable waters has necessarily been so lowered that the India Sanitary Commission in England specially remark upon this fact, pointing out that waters pronounced fit for drinking purposes by the Chemical Examiner here would be utterly condemned at home. One cause of the comparatively inadequate results upon health of this bad water lies in the habits of the people, and has been almost always overlooked. I refer to the fact that the native does not generally drink cold water. Even in the height of the hot season he drinks warm water, and this, as a rule, has been *boiled*. It is frequently the case that whole families scarcely drink ordinary water at all, their ordinary beverage being congee, or the water in which rice or other food-grain has been boiled. It is evident that a dangerous water must be vastly improved by boiling. Almost all living organisms, whether animal or vegetable, are thus destroyed. Among a people so poor that salt is a luxury, a considerable saline element, which will not be neutralized by boiling, is no great harm.

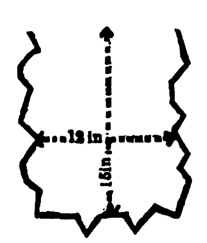
The other two principles are, in my opinion, much the most important in Madras. Foul air cannot be purified. It must be breathed as it is, and anything more foul than the surface atmosphere in many parts of Madras it is almost impossible to conceive. I will not dwell on this point at great length for the foulness of the air is mainly caused by neglect of the third law. But there is one point to which reference must be now made. The alleviating influence of the sea, and that due ventilation and movement of air by which nature strives to correct the evils of a foul atmosphere, are in many parts of the town entirely neutralized by the undue narrowness of the streets. Hundreds of instances come under my notice where this extreme narrowness prevents atmospheric movement of any kind. The breeze may be passing briskly overhead, and yet the street atmosphere is sickening. The air seems to cling to one, damp, reeking and heavy. Do what we will in the way of cleansing, such places can never

be made sweet. Human life must produce foulness and a part of this must escape into the air beyond the reach of municipal sweepers. If the air thus polluted be not removed or diluted by the natural action of atmospheric currents, it remains a fertile source of sickness, a constant annoyance, and danger to those who must live within its influence. Why the streets are so narrow, and what has been done to remedy the evil, will be shown in the next section of this report.

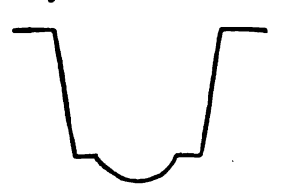
The third principle is in Madras the most important of all, for its neglect necessarily causes neglect of the other two. Exhalations from sewage poison the air, downward percolation of sewage poisons the water. It will be almost incredible to those at a distance, yet the fact remains that large and populous portions of Madras have absolutely no drainage at all. In the heart of Black Town is the Big Parcherry. It has no drains. The 65,547 persons who live in the 1st Division have no sewers, except that here and there a few streets have drains that run into the nearest tank, while in one case a small area is connected with a sewer that discharges its contents on the sea shore. The dense population in the districts known as Cox's Parcherry, Narrayancad, and Mackay's Gardens, are unprovided with a single drain. Except the small stream that runs into the Kistnampett Farm, the whole of the 8th Division with its 41,482 souls is entirely undrained. The greater part of Triplicane, with its teeming inhabitants, is drained (?) into tanks that fester in the midst of it. There are nearly 70,000 persons dwelling in the parcherries of Madras, and I believe I am correct in saying that there was not a drain in any one of them.

Nor is the case much better where there are drains. Those in Black Town were constructed I know not how many years ago, probably about the beginning of the century. They were constructed on wrong principles at first, being flat-bottomed, of large area, and made of very porous friable bricks. In process of time the edge of every brick has worn away, and the section shown in the margin is a fair specimen of our drains. Such drains are mere sewage traps, as if specially devised to do as much harm as possible. The impediments in the course of the sewage are so great and the deposition of silt so easy that, half an hour after cleansing, there is no flow in the drains at all, although the incline is usually more than sufficient, were the course smooth and of moderate dimensions. In parts of New Town and Poodoopett, a better description of drain was laid some years back, as shown in the margin. Compared with the other these drains have worked admirably, and the tile bottom preserves a tolerably smooth surface. But even these are very imperfect compared with what is commonly provided in other parts of the world, and could easily be laid down here.

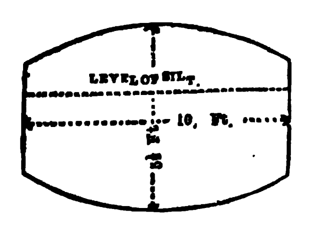
Section of Madras average street drain.



Section of the Tile-bottomed drain.



Section of Main-drain.



But this is not all—such street drains as there are empty themselves into the "main drain," and a more extraordinary thing than this main drain the world has seldom seen. It is no less than 10 feet wide and 5½ feet high. The curve of the drain-floor is so very slight compared with its width that a deposit of six or eight inches of mud or silt neutralizes it entirely. Such a deposit is ensured by the fact that the drain as now managed can only be opened once in 24 hours, and thus the sediment of a single week's sewage more than hides the curve of the floor. Its section is as per margin. The sewage that flows out at each end is a very innocent liquid, although it brings with it the diabolical stench, which is the chief nuisance in Black Town. The innocence of the effluent sewage and the intensity of the effluvium are both caused by the peculiar construction of the drain, combined with the fact previously noted that the sewage can only run off at low tide. Almost all the solid portion of the sewage is left behind in the drain, and this to such good purpose that, when the drain was cleansed a few months ago, the silt stood at the level shown by the dotted line on the diagram, and to remove it cost Rs. 3,000, for some 15,000 cart-loads were taken out of the drain. This festering mass is always putrescent, and all day long noxious gases rise from it, filling the upper part of the drain. When the shutters are opened at low tide this accumulated gas escapes as from a gigantic and most energetic smelling bottle, flooding the whole town with its vapours, and being a distinct and intense nuisance more than a mile away. The effluvia which assail the wanderer through Black Town are generally connected with this main-drain, and issue from the openings necessarily left where the branch-drains enter it. No trap will answer against such a foe, for gas once generated must escape somewhere.

The excavations for the water works reveal very strikingly the evils of the downward percolation of the sewage both where there are no drains and where there are. Mr. Woolley, the Contractor for the works, has drawn my special attention to the fact that in the more densely peopled and old localities, he frequently suffers great inconvenience through the soil being saturated with filth that the workmen exhibit great disinclination to continue their labor. In some places the soil has been found as black as ink to a depth of eight or ten feet, "as black," to use Mr Woolley's expression, "as good tin sand." I have seen excavations made for other purposes in Chintadrepettah where the same blackness was observed for several feet down. Now it is very evident that the earth does not retain this sewage as a well-corked bottle might retain wine. The sewage with which the ground is thus saturated is constantly undergoing physical changes. Poisonous gases from it perpetually rise through the upper stratum of earth. Poisonous washings continually descend into the lower stratum of water, defiling every well. Discoloration of the soil in this way is palpable evidence that there is real danger to those who live above the polluted ground—a danger that shows itself in perennial fevers, frequent

epidemic out breaks, and a general debility of intellect and physique among the people. It seems absurd to say more on a subject that so publicly and loudly calls for attention.

Here then, in the condition of the city drainage combined with the narrowness of its streets, is ample explanation of the high death-rate. Where no drains exist, all the liquid filth sinks into the ground, only to decompose there and re-enter the upper world in the shape of poisonous gases, while the parts that are not volatile sink downwards and pollute the water. Where drains exist it is impossible to cleanse them properly or keep them flowing when they have been cleansed. The sanitary staff has worked well during the year, but it cannot perform impossibilities or deliver the city from the evils which must result from the neglect of the most ordinary requirements of civilised life.

REMEDIAL MEASURES ADOPTED.—In the absence of any provision for the construction of drains, these have been mainly three, beyond the ordinary cleansing of the city. They were—

1. The provision of good water.
2. The remodelling of the parcherries.
3. The widening of streets.

The first, though a sanitary work of the highest importance, is specially an engineering task and has not come under the official cognizance of the Sanitary Department. I will not therefore refer to it further, as Mr. Lee will doubtless give full details in his report.

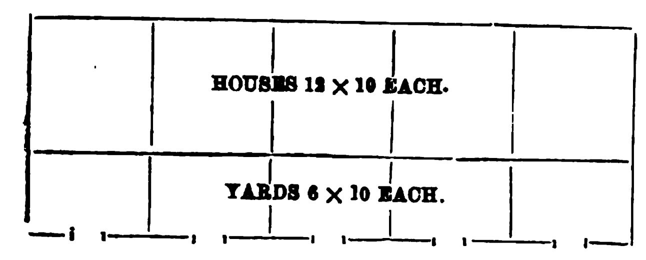
PARCHERRIES.—The second has been the great work of the year in this department. It has long been seen that, although drainage and the provision of pure water are the great requirements of the city, neither can exert more than a portion of their true power while their influence is neutralised by those filthy and uncleanable collections of thatched huts known as parcherries—villages inhabited by the outcaste races who have been hitherto deemed beyond the pale of all public effort or expenditure. There are more than one hundred of these parcherries within municipal limits, and when the year 1871-72 commenced there was neither road nor drain in them, nor was it possible to drive a scavenger's cart through the narrow passages and maze-like turnings which were the only thoroughfares. Language fails me to describe fully the abominations and condition of these places; but those who know what are the inevitable results, even in England, of complete neglect of all sanitary laws, especially in the midst of a people both socially and morally degraded, will have some idea of what things must have been in Madras, where the mean temperature is higher than that of any other town in the world, and among a people so near the condition of untutored savages as the Oddas, Upparas, and Chucklers.

It was at first proposed to replace these parcherries by villages of decent tiny houses, built of brick in mud upon public ground at municipal expense, charging a rent from the tenants not exceeding that paid for the wretched thatched huts. Had it been possible to carry out this scheme, the difficulty would have been at once and for ever solved, as was shown by two model parcherries erected at Chintadripettah and Washermanpettah. It was found that good lines of very nice houses could be built for about Rs. 70 per dwelling, and that the rent a pariah would pay for a mud hut would give 6 or 7 per cent. on the outlay, and therefore repay the municipality. But the scheme required a large initial outlay, and this the funds of the Municipality could not provide. In fact the only expenditure allowed by the Budget in this direction was Rs. 5,000. It was therefore necessary either to cease the work or hit upon some cheaper mode of doing it. After a good deal of consideration a very different plan was arrived at, and very much good has been done.

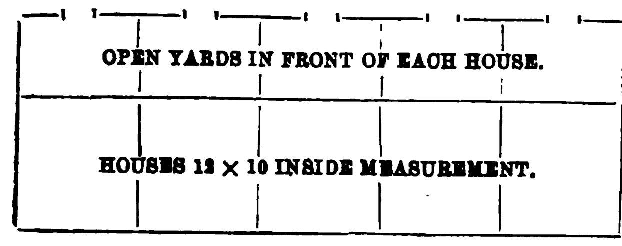
The two worst parcherries in Madras were at Royapooram and Choolay, both inhabited by Oddas. Small-pox, cholera, and fevers of very severe type were almost always present. At my first inspection of the Railway parcherry at Royapooram I found one woman lying dead and eight other persons in various stages of small-pox. Pigs wandered everywhere and found their chief food in the adjacent latrine. There was no semblance of a road through it, and I found great difficulty in riding among its narrow passages. Filth abounded everywhere. It was at once apparent that this parcherry was a standing menace to Black Town, and that nothing but entire re-building would remedy the evil. There were no funds at my disposal to meet this great work. After careful inquiry and thought, it was resolved to call a meeting of the people of the parcherry; and meanwhile the headman was conciliated by the offer of a present. I then explained to the people that we could not possibly permit such a den of filth and disease to continue, that the Act gave us power to call upon them to remedy the evil, and that it was our duty to put the law in force. This was the signal for much weeping and mourning, and many cries and prayers to let them alone. When they fully understood our power over them, the people were told that we pitied their poverty and desired to aid them in converting their village into a place where human beings might decently live. In short, that if they would but help themselves we would help them also. This led to much bargaining as to what each side should do. At length an agreement was come to, that if they would pull down their houses and rebuild them according to our wish, we would build mud walls for them to the height of four feet and would give a bonus of Rs. 2-8 for every house rebuilt according to our directions.

It was also arranged that, to prevent inconvenience to them, their houses should be pulled down a few at a time, and the new ones should be put up before any more were destroyed. With

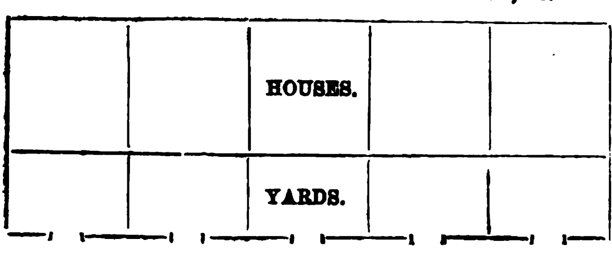
Plan of remodelled Parcherry at Royapooram.



STREET 16 FEET WIDE.



8 FEET PASSAGE FOR WATER FROM ROOF, &c.



STREET.

this the work commenced. It proved a very weary task to all concerned on our side. The idea was so novel, the desire to cheat us so strong, the appreciation of our motives so mixed with suspicion, the prejudices to be contended against were so many, and withal it was so very necessary that we should carry the people with us and refrain from all pressure, that it was months before we saw the end of the work. The success gained was worth waiting and working for. Every house was at last pulled down and rebuilt, and the parcherry is now as neat, as well arranged, and as suitable for habitation as the lines of a native regiment. The plan in the margin will show the arrangement of the houses and streets. Each row of houses was uniform in width and height, but any man who could afford it was allowed to lengthen his house or take the space of two ordinary ones. The parcherry as now completed accommodates nearly one thousand persons, and the total cost to the Municipality has not exceeded Rs. 600. The roads are gravelled and drained.

There has not been a single case of cholera or small-pox in this parcherry since it was remodelled. Only separated from it by the width of the Madras Railway line is another large parcherry. In the hot weather a very virulent outbreak of cholera occurred in this part of Madras, though fortunately it did not greatly extend. In the Rope-godown parcherry the deaths from cholera were nearly one-tenth of the population. In the remodelled parcherry there was not one death.

As soon as it was found that the plan was a success and was extremely economical, the other of these very bad parcherries—that near the Victoria Press in Choolay—was taken in hand with the same results, except that the people themselves gave very little help. It was thoroughly remodelled, and four long rows of tidy and well ventilated houses now occupy the place of the wretched pieces of basket-work into which the occupants had to crawl on hands and knees, and in which none could stand upright. From a sanitary point of view the scheme has answered our warmest anticipations, but I may be excused referring to an equally marked advance in the habits of the people. Dr. Cornish permits me to say that he has observed a striking improvement in the personal cleanliness and social conduct of the people since they were decently accommodated. He sees evidence of a great change for the better. I may add that the Police records show an equal progress. Formerly there was scarcely a night in which the Police were not called in to quell some savage dispute in which knives were freely used. It was the usual thing for some one from this place to be taken before the magistrate for assault or other violent offence. So turbulent a people cannot be changed all at once, but since the remodelling of the parcherry things have greatly altered. The sanitary employés can now perform their duties without fear of insult or personal injury. The Police are much less often called in to quell open riot.

I have entered into these particulars with regard to these two parcherries, because they were the first that were undertaken, and the description need not be repeated for others. In the course of the year many other parcherries were remodelled or taken in hand. Among them I will name the following :—

Tinnevelly Settlement,	situate	in the	1st Division,		West Ward.
Rope-godown Parcherry,		do.		do.	East do.
St. Xavier's	do.	do.	2nd	do.	Centre do.
Powder Mills	do.	do.	4th	do.	
Sawmy Naick's	do.	do.	5th	do.	South Ward.
Naval Hospital	do.	do.	5th	do.	do.
Narrayanoad	do.	do.	5th	do.	do.
Ameer Bagh	do.	do.	6th	do.	do.
Mackay's Gardens	do.	do.	6th	do.	do.
Nisam-ul-Mulk's	do.	do.	6th	do.	do.
Cooty	do.	do.	6th	do.	do.
Kilpaukum	do.	do.	6th	do.	North Ward.
Chetty's Gardens	do.	do.	7th	do.	Centre do.
Culliman	do.	do.	7th	do.	do. do.
Cox's	do.	do.	7th	do.	North do.
Kistnampett	do.	do.	8th	do.	do. do.
Elphinstone Bridge	do.	do.	8th	do.	South Ward.

Many others have been improved by running roads through them, removing encroachments, cutting side ditches and the like. The parcherry last named is one of the best examples of the successful application of the mode of operations previously described. Some of those named above

have not been pulled down and rebuilt entirely or nearly so, but wide roads have been driven through all; many houses have been removed and rebuilt on more suitable sites, and in all cases the municipal scavengers and carts can reach every part of the parcherry. A striking example of this mode of action is seen in the west portion of the Tinnevelly Settlement which is now one of the best ventilated and most regular portions of Madras. The landlord, Mr. Vencatasamy Naidoo, cordially co-operated with us, and with his aid we were able to do very much to remedy the evils which had made this locality a byword for filth and sanitary neglect. The total outlay on this great work during the year was Rupees 9,354-1-11, but a large proportion of this sum was expended upon the two brick-and-tile model parcherries at Chintadrepettah and Royapooram, which are entirely municipal property and bring in a suitable revenue in the shape of rents.

If the policy now begun be continued, in five years every parcherry and coopum in Madras may be thoroughly remodelled, and converted from mere nests of disease into decent and healthy villages.

WIDENING OF STREETS.—The next great task undertaken was the widening of streets. It has been shown in an early part of this report how very necessary it was that some action should be taken to stop, and if possible undo to some extent, the grievous system of encroachment, which was everywhere in force among the Hindus. Well aware that an attempt to regain from individuals what they had unjustly and illegally appropriated out of the public land was a work of great delicacy, certain to provoke great unpopularity, and almost sure to lead us into the civil courts, the utmost care was taken to proceed cautiously, only to interfere when the public health or convenience required it, and to act liberally in the way of compensation. Mr. Loch was so good as to give this department the full weight of his influence and counsel, personally directing some of our operations, and every disputed case was at once referred for his decision. It is with special pleasure that I am able to report that only one case led to an appeal to the courts, and in that the Magistrate fully upheld the action of the municipal officers. It is hoped that this result will be thought satisfactory when it is known that no less than 313 streets were thus widened by the removal of more than 3,000 distinct encroachments. In the great majority of these cases the improvement was carried out with the full consent of all parties concerned. The average effective width of these streets before improvement was only 13¾ feet. Their present effective width is 17¾ feet, so that 313 streets are now four feet wider that before. This list does not include a large number of streets opened for the first time, or the many *cul-de-sacs* that have been made into thoroughfares. For instance, this return does not include the new streets in the remodelled parcherries. Thus in the East Ward of the 1st Division only one widened street is included in the table from which these figures have been taken, and which is appended to this report, yet the Railway parcherry alone contains eight entirely new streets, and there are as many more in the Ropegodown parcherry. In the South Ward of the 5th Division no widened streets are entered, but in the Sawmy Naick, Naval Hospital, Narrayancad and Poodoopett parcherries fully twenty-five entirely new thoroughfares have been laid out.

SEWAGE FARMS.—Chief among less important remedial measures has been the working of the Municipal Sewage Farms. These are now entirely successful, both from a sanitary and financial point of view. At the end of the official year they more than paid all expenses—the income for the months of February and March being Rs. 298-14-10 against an expenditure of Rs. 236-9-10. The sanctioned outlay on the farms for the year was Rs. 2,500, but of this sum only Rs. 1,525-13-2 was expended. If a number of good bills which were outstanding at the end of the year be included, as they ought to be in any estimate of the working of the farms, seeing that it was only by an oversight that they remained due, the working of the whole year left a small profit. Both farms are in excellent order, although at Choolay there is a great deal of available land which cannot be taken up for want of sewage. It was formerly feared that the great difficulty would be in the necessity of using all the sewage that was supplied, but experience has shown that, under the principles of management now in force, a very much larger quantity of sewage than has yet been supplied to either farm can profitably be received and applied to the grass under cultivation. I did myself the honor of reporting specially on the sewage farms in the early part of this year, and beg that the report in question may be appended to this, as the Madras experiments are of service for the whole of India and are watched with great interest even in Europe. I will therefore only say here that, after the most careful and long continued observation under every variation of season and circumstance, there appears every reason to believe that there has at last been discovered a mode of dealing with the sewage of this city by which it can at once be made innocuous, profitable to the public, and highly useful in reclaiming waste land and rendering it suited for the cultivation of food either for man or animals.

REMEDIAL MEASURES PROPOSED.—I cannot too strongly impress upon the Commissioners the necessity of taking in hand the great question of drainage. The attention of the President was almost daily drawn to the very serious evils which now afflict almost every part of this city for want of new or improved drains. Looking to the great number of lives undoubtedly lost each year because of insanitation, no public expenditure can be conceived more profitable than that which should remedy the ills that now beset us. Granted that the outlay required for the remodelling of the Madras drainage system would be very great—granted that it must be raised by loan, and that the interest on such a loan will press heavily on the tax-payers—yet sickness and death press much heavier. The annual tax now paid, in changes of air in time of sickness, in loss of service, in the breaking up of families, in the illness or death of bread-winners, is incalculably greater than any extra burden that the improvement of our drainage would induce. But this difficulty has been and is much exaggerated. The sewage-farm system will enable Madras to be completely sewered at a cost only a fraction of what was deemed necessary when gigantic mains to carry off flood as well as sewage waters were thought essential. Mr. Edwin Chadwick has shown most conclusively that a four-inch pipe of proper manufacture will perfectly answer purposes which are now only half served by drains of 12 × 10 inches laid in expensive brickwork. Four-inch pipes of the very best manufacture can be delivered in Madras for four annas a foot run, including the necessary allowance of T pieces and opercular. Such pipes will answer far better than great drains at Rupees 2 per foot. A few 12-inch pipes will discharge to suitably situated sewage farms the foul waters that now require mains of 10 feet in width. Chintadrepettah and St. Thomé could be thoroughly drained at a very slight expense, as

both are well-defined and limited areas within reach of admirable places of discharge. I beg to be permitted again to urge that something at least should be done each year, completing a certain district at each attempt. Two years ago the Improvement Committee recommended an annual outlay of Rupees 50,000 in such limited areas, and every day's experience adds to the conviction that their suggestion was an eminently wise one.

Subordinate to this but demanding immediate action, is the neglect of the main drain at the Fort and Royapooram. There cannot be two opinions that it is a disgrace and shame to a city like Madras that such a gigantic nuisance should be permitted to exist. Its removal is only a question of money. Works already begun, but to which nothing has been done for more than a year past, would if completed greatly alleviate if not entirely destroy the evil at Fort St. George. If some nuisance should continue after the pump is in full work, it could be remedied by running a cheap interior channel down the centre of the floor of the main drain. The source of the evil is the enormous size of the drain, combined with the unfortunate fact that it can only be opened once a day and not always so often as that. Hence all silt is immediately deposited and the sewage, instead of carrying its filth with it, runs off fairly clear. If the pumps were kept at work, a 12-inch egg-shaped drain in the centre of the floor would carry all the sewage that enters the drain and would keep itself clean, the pumps ensuring the necessary flow. Colonel Silver has assured me that his long observation of the drain rendered it certain to his mind that a 12-inch pipe would easily carry all that enters the sewer. My own observation leads to similar conclusions, but a 12-inch drain would carry more than a 12-inch pipe. All the Madras sewers and drains were intended to meet the demands of flood water as well as sewage, and are therefore immensely too large for sewage purposes, which are those for which they were primarily required and are brought into service every day of every year. This fault runs through the whole series and should be most carefully guarded against in the future.

Another remedial measure which should be more largely adopted is the ventilation of the main and covered secondary drains. In several instances very pungent nuisances have been entirely removed by carrying narrow zinc pipes from the crown of the offending drain to above the roof of some adjacent building of considerable height. The ventilating pipes at the General Post Office have entirely freed its immediate neighbourhood from all effluvium. In Maclean Street, the same result has been noticed. Pipes against the wall of the Wesleyan Chapel have effectually relieved that portion of Popham's Broadway, Jone's Street and Semboo Doss Street. There are many other places where such ventilating pipes would be of immense service, and, pending the construction of improved drains, would greatly mitigate some of the worst ills that afflict Black Town. I imagine that a suitable pipe run up the side of the lighthouse might greatly relieve the main drain outlet. "Kelly's Folly" was altogether ineffective since it was much too low, and only served to conduct the effluvia well over the Fort wall.

WORK OF THE DEPARTMENT.—It only remains now to summarise the routine duty performed by this department during the year 1871-72. The table given below will exhibit this information in a compendious form.

TABLE XXX.

Table showing work done by the Sanitary Department in the year 1871-72.

Division and Ward.	No. of Carts (Rubbish.)	No. of Carts (Boxes.)	No. of Carts (Latrine.)	Total No. of Carts.	No. of R. cart trips daily.	No. of B. cart trips daily.	No. of L. cart trips daily.	Total No. of trips daily.	No. of persons employed in ward.	No. of streets in ward.	No. of houses in ward.	No. of streets improved, exclusive of Parcherries.	Previous average effective width.	Present average effective width.	No. of encroachments removed.	No. of Parcherries remodelled.	Length of side drains made.	No. of notices served.	No. of prosecutions.	No. of prosecutions successful.	No. of prosecutions failed.	Fines realized.	No. of wells furnished with walls.
																	M. F. Y.					RS. A. P.	
1 E.	10	4	5	19	44	21	10	75	66	69	5,813	1	19	21	40	1	5 4 19⅓	185	22	22	...	16 0 0	24
1 W.	12	2	4	18	36	10	8	54	70	82	5,155	31	16½	20¾	263	1	11 14 113	325	53	53	...	49 12 0	15
2 N.	9	7	...	16	27	35	...	62	37	64	2,094	16	14½	16½	291	...	0 1 116	45	2	2	...	3 0 0	6
2 S.	13	7	...	20	39	35	...	74	36	75	1,870	18	11½	16⅓	386	...	....	311	95	95	...	440 8 0	6
2 C.	22	9	...	31	76	45	...	121	71	78	3,443	46	14½	15	841	...	....	573	20	20	...	70 0 0	20
3 N.	24	14	2	40	72	70	6	148	87	117	4,188	5	11	13½	111	3	1,000 feet.	94	49	47	2	77 0 0	2
3 S.	13	6	...	19	39	30	...	69	47	41	1,573	6	13	17½	64	...	....	240	...	...	...	....	...
4	3	3	3	9	15	15	3	33	2	61	1,490	1	14	17	1	1	6 fur.	136	7	7	...	....	21
5 N.	11	8	3½	22½	55	40	16	111	4	137	4,008	1	10	15	14	2	2 ms. 3¼ „	228	14	14	...	....	15
5 S.	14	10	...	24	42	30	...	72	63	116	3,546	...	...	...	16	2	17 „ 2055 „	120	13	12	1	27 0 0	...
6 N.	2	...	1	3	6	...	2	8	11	42	1,484	31	14	18	62½	4	1,342 feet.	375	39	37	2	25 0 0	28
6 S.	6	1	2	9	18	5	4	27	35	66	1,436	2	16	20	10	1	6 furlongs	35	...	...	...	....	6
7 N.	11	7	2	20	52	35	4	91	55	67	2,255	20	15½	16¾	74	...	5 6 13 2 ft.	114	6	6	...	4 0 0	4
7 S.	11	5	2	18	39	28	5	72	54	99	3,132	32	14½	18¾	335	3	9 3 26 1 „	160	9	9	...	2 0 0	5
7 C.	11	7	1	19	49	35	3	87	58	96	4,140	48	12	14¾	344	2	10 5 68 2 „	245	14	14	...	10 0 0	22
8 N.	8	4	2	14	22	20	4	46	80	124	3,914	14	16¼	19¼	100	1	22 9 211 2 „	101	6	6	...	....	7
8 S.	6	3	1	10	17	15	2	34	26	106	2,259	46	20	23½	343	2	17 5 168 1 „	178	...	...	...	....	17
Total...	186	97	28½	311½	648	469	67	1,184	802	1,440	51,750	313	13¾	17¾	3,052	23	miles. yards. 107 0 57 2	3,465	349	344	5	724 4 0	198

The first thing that draws attention in this table is the immensity of the mass of rubbish and night-soil removed each day throughout the year. On the average during 1871-72 there were no less than 1,184 cart-loads removed daily, or 432,160 cart-loads during the year. These figures are easy to write, but they represent an amount of work that is not easily conceived. If we estimate the weight carried at each trip at half a ton or 1,120 lbs., there was collected the great aggregate of 216,080 tons of refuse. This is considerably in excess of the quantity collected at Bombay in the same year, for there the collection was 113,376 tons of garbage and 53,180 tons of night-soil, making a total of 166,556 tons. The Madras collections were therefore nearly 50,000 tons in excess of those at Bombay. In Madras an average of 308 pairs of bullocks were kept at work, and the sanitary out-door staff was 802 men, women and boys. In Bombay an average of 380 pairs of bullocks were at work, and the out-door staff was 1,379 in the scavenging department and 891 halalcores. With 70 pairs of bullocks and several hundred men less than in Bombay we have collected 50,000 tons in excess of their gatherings. This is not intended as any reflection on the Bombay administration, where the circumstances are different, but to show that the Madras sanitary staff has worked fairly well during the year.

3,465 notices under the Act were served during the year. The great majority were at once attended to but we were compelled to prosecute in 349 cases of neglect. In 344 of these cases judgment was given in our favour—in 5 it was against us, owing in each case to the inexperience of the overseer. A prosecuting officer, who should be held responsible for the due preparation of all municipal cases, is sorely needed. Every overseer has to prosecute his own cases, after the Sanitary Officer has satisfied himself that prosecution is necessary. They have had no legal education, know nothing of the law of evidence, and have to contend with a strong prejudice against municipal cases. The wonder is that we have lost so few cases, not so many. In one case a man was charged with burying a child in the house where it died. He confessed the crime and, in consideration of this, the overseer was instructed to ask for a light sentence. At the last moment the man pleaded not guilty. The overseer had not expected this and witnesses were not forthcoming. The circumstances of the case were explained to the Court, but *the magistrate dismissed the case and fined the municipality Rs.* 20 *for a malicious prosecution, grounding his decision partly on the fact that we had asked for a light sentence.* In another case a Mahommedan prosecuted the municipality for damage done in clearing out a drain. The magistrate visited the spot, declared that the case was altogether paltry and frivolous, but gave substantial damages against us (Rs. 20.)

The fines realized to the credit of the Municipal Fund were Rs. 724-4-0. Fines inflicted in our cases but credited to Government amounted to about Rs. 500 more, making a total of about Rs. 1,200, recovered through the police courts.

Expenditure.—The total expenditure of the Sanitary Department in 1871-72 was as follows :—

	Budget Grant.	Actuals.	Savings.
	Rs.	Rs.	Rs.
Establishment, in-door	1,908	1,858	50
Do. out-door	1,34,396	1,23,278	11,118
Registry of births and deaths... ...	4,368	4,368	......
Other charges	22,010	21,268	742
Total ...	1,62,682	1,50,772	11,910

Receipts.—It is not generally known that the Sanitary Department is also a great collecting agency. The following sums have passed through it into the general fund during the year 1871-72 :—

	Actuals.		
	Rs.	A.	P.
Rent of market stalls	7,504	11	9
Slaughter house fees...	6,128	13	3
Strand rents	506	5	7
Fees for offensive trades, &c.	3,625	0	5
Sale of rubbish	3,032	5	0
Sewage farms	1,287	10	2
Police fines	724	4	0
Contractors' fines, about	500	0	0
Total...	23,309	2	2

Mr. Ross, the Assistant Sanitary Inspector, gave valuable and cordial assistance throughout the year, relieving me especially from much office work. The Overseers as a rule laboured very willingly and efficiently. Gooroosawmy and Nullapa were especially active and successful and have often received warm commendation. Among the Junior Overseers, Gibson, Arnagherry, Lokiah and Thungaprakasen merit special mention.

CHARLES E. GOVER,

SANITARY OFFICER,

Madras Municipality.

APPENDIX.

TABLE I.

Deaths registered in the town of Madras, for the year 1871-72, arranged according to race.

	Europeans, 3,618.		East Indians, 12,013.		Hindoos, 330,052.		Mahomedans, 50,964.		Total, 3,97,552.		Total of both Males and Females.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Small-pox	2	1	6	5	128	149	33	19	169	174	343
Measles	1	1	3	1	40	35	10	7	54	44	98
Fevers	3	4	19	16	982	1,138	98	119	1,102	1,277	2,379
Dysentery	7	...	5	5	419	381	76	71	507	457	964
Diarrhœa	4	1	16	8	461	478	36	48	517	534	1,051
Cholera	2	...	4	6	158	192	42	49	206	248	454
Total of special diseases	19	7	53	41	2,188	2,373	295	313	2,555	2,734	5,289
Other diseases	60	20	100	109	3,345	3,109	569	614	4,074	3,852	7,926
All diseases	79	27	153	150	5,533	5,482	864	927	6,629	6,586	13,215
Death-rate per mille	29·3		25·2		33·3		35·1		33·4		33·4
Mean Mortality of 10 previous years, from 1861-62 to 1870-71.											
Special diseases	38·8	18·2	69·8	75·2	2,623·	2,523·1	336·0	382·2	3,068·3	2,998·7	6,067·0
Other diseases	70·1	30·4	106·0	110·9	2,678·	2,260·3	514·8	504·0	3,369·2	2,905·6	6,274·8
Total...	109·0	48·6	175·8	186·1	5,301·9	4,783·4	850·8	886·2	6,437·5	5,904·3	12,341·8
Increase in 1871-72	...		...		929·7		54·0		...		873·2
Decrease in 1871-72	51·6		58·9		...		...		...		...
Death-rate per mille (11 years)	43·6		30·1		30·5		34·		31·		31·
Do. „ (1871-72)	29·3		25·2		33·3		35·1		33·4		33·4
Difference from average	— 14·3		— 4·9		× 2·8		× 1·1		× 2·4		× 2·4

TABLE II.

Return of Deaths from special and other diseases among all classes in the year 1871-72, arranged according to months.

EUROPEANS.

—	Small Pox. M.	Small Pox. F.	Measles. M.	Measles. F.	Fevers. M.	Fevers. F.	Dysentery. M.	Dysentery. F.	Diarrhœa. M.	Diarrhœa. F.	Cholera. M.	Cholera. F.	Other diseases. M.	Other diseases. F.	Total. M.	Total. F.	Total of both Males and Females.
April 1871	...	...	...	...	...	...	...	...	...	...	...	...	6	4	6	4	10
May .... ,,	...	...	...	...	2	...	...	...	1	...	...	...	4	3	7	3	10
June .... ,,	...	...	1	1	...	1	...	...	...	...	1	1	7	2	9	5	14
July .... ,,	...	...	...	...	...	...	1	...	...	...	...	...	4	1	5	1	6
August .... ,,	...	...	...	...	...	1	1	...	...	...	...	...	9	1	10	2	12
September .... ,,	.	...	...	...	...	1	...	...	...	...	...	...	6	1	6	2	8
October .... ,,	...	...	...	...	1	...	...	...	1	...	...	...	7	...	9	...	9
November .... ,,	...	...	...	...	...	...	...	. .	1	...	...	...	4	1	5	1	6
December .... ,,	...	...	...	...	...	...	2	..	..	...	...	..	2	2	4	2	6
January 1872	...	...	...	...	...	...	2	...	1	...	...	...	4	2	7	2	9
February .... ,,	...	...	...	...	...	1	...	...	...	...	1	...	5	3	6	4	10
March .... ,,	2	1	...	...	...	...	1	...	...	...	...	...	2	...	5	1	6
Total......	2	1	1	1	3	4	7	...	4	...	2	1	60	20	79	27	106

EAST INDIANS.

—	Small Pox. M.	Small Pox. F.	Measles. M.	Measles. F.	Fevers. M.	Fevers. F.	Dysentery. M.	Dysentery. F.	Diarrhœa. M.	Diarrhœa. F.	Cholera. M.	Cholera. F.	Other diseases. M.	Other diseases. F.	Total. M.	Total. F.	Total of both Males and Females.
April 1871	...	1	1	...	3	2	...	...	2	...	...	...	9	17	15	20	35
May .... ,,	...	...	1	1	3	1	...	...	...	1	...	2	15	7	19	18	32
June .... ,,	1	...	1	...	4	2	1	1	2	1	2	3	4	11	15	18	33
July .... ,,	...	...	...	...	1	1	...	1	2	2	...	...	6	9	9	13	22
August .... ,,	...	...	...	...	1	2	2	...	...	...	...	...	7	11	10	13	23
September .... ,,	...	...	...	...	...	2	...	1	1	...	2	...	8	7	11	10	21
October .... ,,	...	1	..	...	2	2	...	1	1	2	...	...	8	4	11	10	21
November .... ,,	...	...	...	...	1	..	...	...	3	...	...	...	8	9	12	9	21
December .... ,,	...	...	...	...	...	1	1	...	1	...	...	...	10	10	12	11	23
January 1872	2	...	...	...	1	2	...	...	...	1	...	...	7	8	10	11	21
February .... ,,	2	...	...	...	...	..	1	1	3	1	...	...	10	10	16	12	28
March .... ,,	1	3	...	...	3	1	...	...	1	...	...	...	8	6	13	10	23
Total......	6	5	3	1	19	16	5	5	16	8	4	6	100	109	158	150	308

HINDOOS.

—	Small Pox. M.	Small Pox. F.	Measles. M.	Measles. F.	Fevers. M.	Fevers. F.	Dysentery. M.	Dysentery. F.	Diarrhœa. M.	Diarrhœa. F.	Cholera. M.	Cholera. F.	Other diseases. M.	Other diseases. F.	Total. M.	Total. F.	Total of both Males and Females.
April 1871	18	16	10	10	86	105	24	17	40	27	8	10	307	266	498	451	944
May .... ,,	5	8	6	9	111	104	37	27	34	38	58	78	253	238	504	502	1,006
June .... ,,	5	6	7	1	102	110	32	27	28	23	29	42	243	247	446	461	907
July .... ,,	7	7	2	3	98	85	38	30	30	43	20	18	281	276	471	457	928
August .... ,,	2	6	...	3	74	89	38	39	41	46	19	19	268	273	437	475	912
September .... ,,	8	10	4	2	68	94	43	42	40	35	17	25	263	266	443	474	917
October .... ,,	12	6	2	1	77	81	29	41	46	40	4	4	267	228	437	401	838
November .... ,,	5	7	4	--	60	72	23	29	41	39	1	...	298	280	422	437	859
December .... ,,	3	3	...	2	78	109	46	32	45	36	...	...	279	252	451	439	890
January 1872	5	6	1	...	89	107	35	45	29	47	...	...	332	284	491	489	980
February .... ,,	24	25	2	2	72	90	38	30	42	47	1	...	302	243	481	437	918
March .... ,,	34	44	2	2	72	92	36	22	45	52	1	1	257	256	447	469	916
Total......	128	149	40	35	982	1,138	419	381	461	478	158	192	3,345	3,109	5,538	5,482	11,015

MAHOMEDANS.

—	Small Pox. M.	Small Pox. F.	Measles. M.	Measles. F.	Fevers. M.	Fevers. F.	Dysentery. M.	Dysentery. F.	Diarrhœa. M.	Diarrhœa. F.	Cholera. M.	Cholera. F.	Other diseases. M.	Other diseases. F.	Total. M.	Total. F.	Total of both Males and Females.
April 1871	8	1	4	...	7	15	3	7	6	3	1	1	68	59	97	86	183
May .... ,,	3	2	2	2	15	10	4	8	1	5	14	20	44	63	88	110	198
June .... ,,	1	2	1	1	13	9	8	2	5	4	3	2	45	57	76	77	153
July .... ,,	...	1	1	1	12	10	5	3	3	2	3	...	59	45	83	62	145
August .... ,,	...	...	...	...	7	9	7	4	7	3	1	2	29	45	51	68	119
September .... ,,	...	1	...	1	7	10	3	7	2	5	19	22	38	59	69	105	174
October .... ,,	3	...	1	...	9	4	11	6	...	2	1	1	55	46	80	59	139
November .... ,,	1	...	...	...	4	8	4	7	1	3	...	...	43	44	53	62	115
December .... ,,	2	1	...	1	4	7	9	7	5	3	...	...	38	51	58	70	128
January 1872	3	3	1	...	7	18	13	13	5	6	...	...	63	48	92	88	180
February .... ,,	1	5	..	1	4	6	4	3	1	3	...	1	38	47	48	66	114
March .... ,,	6	3	...	...	9	13	5	4	...	4	...	...	49	50	69	74	143
Total......	33	19	10	7	98	119	76	71	36	43	42	49	569	614	864	927	1,791

TABLE III.

Table showing the average deaths in Madras for 10 *previous years ending* 1870-71, *as contrasted with the mortality of the year* 1871-72.

—	Small Pox.	Measles.	Fevers.	Dysentery.	Diarrhœa.	Cholera.	Other diseases.	Total.	Order of salubrity.
In the year 1861-62 ...	996	27	2,182	1,307	1,048	3,751	5,162	14,473	9th
,, 1862-63 ...	522	19	2,243	1,230	1,065	3,768	5,755	14,602	10th
,, 1863-64 ...	187	8	2,204	1,252	865	754	5,930	11,200	2nd
,, 1864-65 ...	71	5	1,916	1,025	923	472	5,466	9,878	1st
,, 1865-66 ...	66	1	2,287	1,224	1,083	1,018	5,903	11,582	5th
,, 1866-67 ...	173	6	2,412	1,465	957	3,263	6,360	14,636	11th
,, 1867-68 ...	897	87	2,283	1,241	790	25	6,349	11,672	6th
,, 1868-69 ...	443	38	2,184	904	697	2	7,258	11,526	3rd
,, 1869-70 ...	24	4	2,147	924	716	629	7,083	11,527	4th
,, 1870-71 ...	77	48	2,370	922	706	844	7,355	12,322	7th
Total ...	3,456	243	22,228	11,494	8,850	14,526	62,621	1,23,418	...
Average ...	345·6	24·3	2222·8	1149·4	885·0	1452·6	6262·1	12341·8	...
,, 1871-72 ...	343	98	2,379	964	1,051	454	7,926	13,215	8th
Increase ...	...	73·7	156·2	...	166·0	...	1663·9	873·2	...
Decrease ...	2·6	...	...	185·4	...	998·6	...	...	...

TABLE IV.

Table showing the Deaths in Madras for the year 1871-72 arranged according to weeks.

	1st Quarter 1871-72.												
	1st to 7th April.	8th to 14th April.	15th to 21st April.	22nd to 28th April.	29th to 5th May.	6th to 12th May.	13th to 19th May.	20th to 26th May.	27th to 2nd June.	3rd to 9th June.	10th to 16th June.	17th to 23rd June.	24th to 30th June.
Small-Pox	9	9	11	13	6	7	3	6	5	3	3	3	4
Measles	6	7	3	5	5	7	9	2	3	4	5	2	1
Fevers	49	48	53	51	54	51	60	67	47	61	53	63	48
Dysentery	12	10	12	11	22	19	17	12	17	18	12	19	17
Diarrhœa...	23	14	19	19	16	16	18	21	17	12	16	15	20
Cholera	2	2	8	4	23	48	44	31	42	36	22	7	7
Other diseases	155	174	182	180	162	128	131	150	137	139	146	154	141
All diseases	256	264	288	283	288	276	282	289	268	278	257	263	238

	2nd Quarter 1871-72.												
	1st to 7th July.	8th to 14th July.	15th to 21st July.	22nd to 28th July.	29th to 4th August.	5th to 11th August.	12th to 18th August.	19th to 25th August.	26th to 1st Sept.	2nd to 8th Sept.	9th to 15th Sept.	16th to 22nd Sept.	23rd to 30th Sept.
Small-Pox	8	1	0	5	1	0	2	4	2	7	5	3	4
Measles	3	2	0	1	1	3	0	0	0	1	3	2	1
Fevers	47	50	50	38	41	42	41	41	39	44	46	38	50
Dysentery	17	20	19	18	23	24	16	18	19	21	29	21	25
Diarrhœa...	20	14	18	20	24	26	19	19	28	16	12	15	36
Cholera	6	11	8	8	7	9	12	4	14	21	19	30	13
Other diseases	152	151	161	154	140	131	147	170	141	158	142	161	159
All diseases	253	249	256	244	237	235	237	251	243	268	256	270	288

Table showing the average deaths for 10 previous years arranged according to weeks.

	1st to 7th April.	8th to 14th April.	15th to 21st April.	22nd to 28th April.	29th to 5th May.	6th to 12th May.	13th to 19th May.	20th to 26th May.	27th to 2nd June.	3rd to 9th June.	10th to 16th June.	17th to 23rd June.	24th to 30th June.
Small-Pox	17·1	17·4	15·3	11·2	11·7	12·7	10·2	8·1	7·2	6·8	4·5	5·3	5·7
Measles	1·0	1·9	0·5	1·0	0·3	0·3	0·1	...	0·3	0·2	0·1	0·3	0·1
Fevers	39·6	38·0	39·6	40·9	39·5	42·5	40·1	40·9	42·1	42·6	40·7	41·1	42·1
Dysentery	19·4	18·3	19·3	19·9	20·4	18·9	19·5	19·8	20·7	21·4	17·8	16·5	18·5
Diarrhœa	14·8	15·6	11·6	14·7	14·7	14·9	21·9	15·1	17·1	14·8	15·4	13·9	15·6
Cholera	20·2	14·2	15·6	12·3	12·9	14·1	11·1	14·8	15·5	20·7	27·7	23·1	16·4
Other diseases	107·5	108·0	110·1	117·8	111·2	110·8	118·2	114·8	113·1	121·6	110·8	111·0	113·8
All diseases	219·6	213·9	212·5	217·3	210·7	214·2	221·1	213·0	216·0	228·1	217·0	211·2	212·2

	1st to 7th July.	8th to 14th July.	15th to 21st July.	22nd to 28th July.	29th to 4th August.	5th to 11th August.	12th to 18th August.	19th to 25th August.	26th to 1st Sept.	2nd to 8th Sept.	9th to 15th Sept.	16th to 22nd Sept.	23rd to 30th Sept.
Small-Pox	4·8	4·0	4·2	5·3	3·9	3·7	4·4	4·3	3·1	4·0	4·6	3·9	1·8
Measles	...	0·2	0·1	...	...	...	0·1	0·2	0·2	...	0·1	0·2	0·2
Fevers	45·0	42·0	41·7	41·3	39·4	43·0	43·5	45·6	41·3	43·6	47·0	43·5	48·4
Dysentery	21·2	20·2	19·5	21·2	20·5	20·3	21·3	21·3	23·3	24·4	24·3	27·3	29·3
Diarrhœa	16·9	16·0	18·3	18·1	18·6	20·3	19·6	17·9	19·7	20·9	18·4	20·1	19·0
Cholera	18·0	26·3	26·1	27·5	32·9	41·9	57·3	49·3	45·6	39·2	38·1	53·3	55·5
Other diseases	108·4	116·1	118·6	120·4	119·0	122·3	120·6	124·1	129·5	122·3	166·3	119·2	114·0
All diseases	214·3	225·3	229·0	233·3	234·3	253·0	267·3	263·7	263·2	254·9	299·3	268·0	269·1

Table showing the Deaths in Madras for the year 1871-72, *arranged according to weeks.*—(Concluded.)

—	3rd Quarter, 1871-72.													4th Quarter, 1871-72.													
	1st to 6th October.	7th to 13th October.	14th to 20th October.	21st to 27th October.	28th to 3rd November.	4th to 10th November.	11th to 17th November.	18th to 24th November.	25th to 1st December.	2nd to 8th December.	9th to 15th December.	16th to 22nd December.	23rd to 31st December.	1st to 5th January.	6th to 12th January.	13th to 19th January.	20th to 26th January.	27th to 2nd February.	3rd to 9th February.	10th to 16th February.	17th to 23rd February.	24th to 1st March.	2nd to 8th March.	9th to 15th March.	16th to 22nd March.	23rd to 31st March.	Total.
Small-pox ...	6	5	5	2	6	7	2	1	1	5	3	2	4	6	3	3	4	3	16	11	17	19	20	17	25	26	348
Measles ...	2	1	1	0	0	0	1	1	2	1	0	0	2	0	0	1	1	0	1	3	0	1	3	0	1	0	98
Fevers	40	39	40	34	38	32	27	37	40	43	50	39	61	40	50	36	56	55	47	40	42	35	28	49	46	58	2,379
Dysentery ...	20	19	18	21	16	14	14	12	19	27	19	21	28	21	25	19	32	15	26	20	11	19	17	20	7	21	964
Diarrhœa ...	15	16	21	25	24	16	20	25	21	19	21	22	25	10	21	17	22	25	28	28	18	20	27	29	20	28	1,951
Cholera ...	7	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	0	0	454
Other diseases ...	135	134	136	140	122	170	175	162	157	128	164	170	158	128	175	175	165	159	154	153	157	166	158	137	125	182	7,926
All diseases ...	225	215	222	222	207	239	239	239	240	223	257	254	278	205	274	251	280	257	272	256	246	262	253	253	224	315	18,215

Table showing the average Deaths for 10 *previous years arranged according to weeks.*—(Concluded.)

Small-pox ...	4·3	2·9	1·4	2·2	1·7	2·6	2·6	2·7	2·8	1·1	2·7	3·0	3·0	5·0	4·5	5·9	7·7	6·2	5·6	9·6	11·2	10·7	12·2	12·9	14·1	21·3	345·6
Measles ...	0·2	0·3	0·1	0·2	0·3	0·2	0·3	0·4	0·7	0·6	0·2	0·4	0·5	0·2	0·5	0·7	0·6	0·4	0·8	0·7	1·3	1·3	1·2	1·9	1·0	1·9	24·3
Fevers	45·6	46·5	43·6	43·2	42·6	41·3	42·9	40·8	40·7	41·3	41·2	45·6	48·2	45·8	44·2	45·6	44·1	42·0	45·3	43·9	40·8	45·1	41·1	43·4	41·1	40·4	2222·8
Dysentery ...	24·5	21·2	23·1	22·6	23·2	22·0	20·9	20·8	22·8	23·5	23·7	24·4	26·7	28·2	24·8	23·7	23·3	26·1	26·3	23 2	21·7	23·3	25·1	22·2	21·7	18·4	1149·4
Diarrhœa ...	20·0	19·8	15·9	17·0	19·9	16·8	16·6	16·5	17·7	14·8	14·1	17·2	17·0	14·8	18·0	17·4	18·3	18·5	19·8	15·5	16·8	16·2	16·6	16·1	15·9	11·5	885·0
Cholera ...	41·7	34·7	31·3	28·9	21·7	22·0	19·7	15·8	19·0	17·4	18·3	22·2	23·2	29·9	27·4	34·1	46·5	39·9	35 5	33·0	34·0	35·1	30·7	28·4	20·4	10·2	1452·6
Other diseases ...	131·8	121·7	123·1	130·0	126·6	123·1	129·6	122·4	131·5	126·6	124·5	129·5	148·3	126·6	114·2	133·5	125·3	132·6	112·9	119·7	122·5	113·4	115·6	116·9	116·1	88·8	6262·1
All diseases ...	268·1	247·1	238·5	234·1	236·0	228·5	232·6	219·4	235·2	225·3	224·7	242·3	266·9	245·5	233·6	256·2	266·3	265·7	246·2	245·6	248·3	245·1	242·5	241·8	230·3	292·5	12341·8

TABLE V.

Table showing the Deaths from special and other diseases for the year 1871-72, arranged according to Divisions.

Municipal Division.	Names of Villages.	Cholera.	Small-pox.	Measles.	Fevers.	Dysentery.	Diarrhœa.	Other diseases.	Total.
1	Tondiarpettah	1	1	...	30	17	6	66	121
	Washerman's Pettah ...	46	22	2	166	78	43	389	746
	Monegar Choultry	11	1	...	3	11	27	190	243
	Royapooram	37	15	1	75	32	12	190	362
	Cashmode	9	2	...	65	27	11	154	268
	Total ...	104	41	3	339	165	99	989	1,740
2	Peddoo Naick's Pettah ...	53	32	7	625	79	319	1,563	2,678
	Big Paracherry	9	10	...	21	4	1	63	108
	John Pereira's Garden ...	...	...	1	...	...	...	14	15
	Total ...	62	42	8	646	83	320	1,640	2,801
3	Fort Saint George	...	...	...	...	...	...	11	11
	Moottealpettah	32	70	18	375	84	169	896	1,644
	Uttapaulliam	...	5	...	1	1	2	4	13
	Total ...	32	75	18	376	85	171	911	1,668
4	Gunpowder Mills	...	...	1	...	...	...	3	4
	Perambore	4	8	1	43	32	21	218	327
	Viasarapaudy	3	1	3	16	20	16	82	141
	Total ...	7	9	5	59	52	37	303	472
5	Choolay	12	4	5	57	20	31	243	372
	Pursewalkum	43	19	10	154	102	88	649	1,065
	Pareamettoo	2	2	...	49	11	13	133	210
	New Town	...	1	...	14	11	7	46	79
	Vepery	...	...	2	27	13	9	100	151
	Poodoopettah	6	13	4	21	17	15	73	149
	Egmore	18	2	1	14	13	22	186	256
	Comaleeswaram	4	8	3	29	15	9	79	147
	Total ...	85	49	25	365	202	194	1,509	2,429
6	Kilpaukum	...	...	...	3	5	4	28	40
	Chetput	...	...	...	3	22	10	23	58
	Nungumbaukum	4	...	2	19	35	22	78	160
	Mackay's Garden	3	7	...	22	35	20	66	153
	Total ...	7	7	2	47	97	56	195	411
7	Poodoopaukum	2	6	3	35	18	6	111	181
	Chintadripettah	18	4	9	68	44	49	335	527
	Narasingapooram	4	...	1	5	13	4	45	72
	Triplicane	94	48	19	185	82	64	1,007	1,499
	Theroovateeswaranpettah ...	2	4	...	13	3	3	41	66
	Total ...	120	62	32	306	160	126	1,539	2,345
8	St. Thomé	13	28	3	117	68	23	481	733
	Alwarpettah	...	...	...	6	1	...	5	12
	Royapettah	7	11	...	50	19	7	131	225
	Meer Saib's Pettah	10	...	...	19	12	7	85	133
	Kistnampettah	5	2	1	14	6	5	65	98
	Thanampettah	2	17	1	35	14	6	78	148
	Total ...	37	58	5	241	120	48	840	1,349
	General Total ...	454	348	98	2,379	964	1,051	7,926	13,215

TABLE VI.

Deaths registered in the Town of Madras for the 1st quarter of 1872.

—	Europeans.		East Indians.		Hindus.		Mahomedans.		Total.		Total of both Males & Females.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Small-pox	2	1	5	3	63	75	10	11	80	90	170
Measles...	...	...	...	...	5	4	1	1	6	5	11
Fevers	...	1	4	3	233	289	20	37	257	330	587
Dysentery	3	...	1	1	109	97	22	20	135	118	253
Diarrhœa	1	...	4	2	116	146	6	13	127	161	288
Cholera	1	...	...	...	2	1	..	1	3	2	5
Total of Special diseases	7	2	14	9	528	612	59	83	608	706	1,314
Other diseases ...	11	5	25	24	891	783	150	145	1,077	957	2,034
All diseases	18	7	39	33	1,419	1,395	209	228	1,685	1,663	3,348
Mean Mortality of 10 *previous years from* 1862 *to* 1871.											
Special diseases ...	10·3	3·9	17·0	15·7	694·3	655·8	99·0	124·7	820·6	800·1	1620·7
Other do. ...	17·2	6·5	22·4	26·2	661·1	551·6	126·4	127·5	827·1	711·8	1538·9
Total...	27·5	10·4	39·4	41·9	1355·4	1207·4	225·4	252·2	1647·7	1511·9	3159·6
Increase	...		...		251 2		...		...		188·4
Decrease	12·9		9·3		...		40·6		...		...

TABLE VII.

Table showing the Deaths from special and other diseases for the 1*st quarter of* 1872, *arranged according to weeks.*

—	1st to 5th January.	Week ending 12th January.	Week ending 19th January.	Week ending 26th January.	Week ending 2nd February.	Week ending 9th February.	Week ending 16th February.	Week ending 23rd February.	Week ending 1st March.	Week ending 8th March.	Week ending 15th March.	Week ending 22nd March.	23rd to 31st March.	Total.
Small-pox ...	6	3	3	4	3	16	11	17	19	20	17	25	26	170
Measles ...	...	...	1	1	...	1	3	...	1	3	...	1	...	11
Fevers ..	40	50	36	56	55	47	40	42	35	28	49	46	63	587
Dysentery ...	21	25	19	32	15	26	20	11	19	17	20	7	21	253
Diarrhœa ...	10	21	17	22	25	28	28	18	20	27	29	20	23	288
Cholera ...	...	...	...	...	...	...	1	1	2	...	1	...	...	5
Other diseases	128	175	175	165	159	154	153	157	166	158	137	125	182	2,034
All diseases ...	205	274	251	280	257	272	256	246	262	253	253	224	315	3,348

Average of the 1*st quarters of* 10 *previous years, arranged according to weeks.*

Small-pox ...	5·0	4·5	5·9	7·7	6·2	5·6	9·6	11·2	10·7	12·2	12·9	14·1	21·8	126·9
Measles ...	0·2	0·5	0·7	0·6	0·4	0·2	0·7	1 3	1·3	1 2	1·9	1·0	1·9	12·5
Fevers ...	45·6	44·2	45·6	44·1	42·0	45·3	43·9	40·3	45·1	41·1	43·4	41·1	40·4	562·8
Dysentery ...	23·2	24·8	23·7	23·3	26·1	26·3	23·2	21·7	23·3	25·1	22·2	21·7	18·4	303·0
Diarrhœa ...	14·8	18·0	17·4	18·8	18·5	19·8	15·5	16·8	16·2	16·6	16·1	15·9	11·5	215·9
Cholera ...	29 9	27·4	34·1	46·5	39·9	35 5	33·0	34·0	35·1	30·7	28·4	20·4	10·2	405·1
Other diseases	126·6	114·2	128·8	125·3	132·6	112·9	119·7	122·5	113·4	115·6	116·9	116·1	88·8	1533·4
All diseases ...	245·5	233·6	256·2	266·3	265·7	246·2	245·6	248·3	245·1	242·5	241·8	230·3	192·5	3159·6

TABLE VIII.

Table showing the Deaths from special and other diseases in the 1st quarter of 1872, arranged according to Divisions.

Municipal Division.	Names of Villages.	Cholera.	Small-pox.	Measles.	Fevers.	Dysentery.	Diarrhœa.	Other diseases.	Total.
1	Tondiarpettah	...	...	...	3	4	2	14	23
	Washerman's Pettah	...	7	...	38	18	17	107	187
	Monegar Choultry	...	1	...	...	3	1	59	64
	Royapooram	...	6	...	22	5	3	53	89
	Cashmode	...	...	...	15	7	3	40	65
	Total ...	...	14	...	78	37	26	273	428
2	Peddoo Naick's Pettah ...	...	25	1	147	19	100	415	707
	Big Parcherry	...	7	...	3	1	1	8	20
	John Pereira's Garden	...	...	...	...	...	...	3	3
	Total ...	...	32	1	150	20	101	426	730
3	Fort Saint George	...	...	...	...	...	...	1	1
	Mootealpettah	2	37	3	87	35	39	210	413
	Uttapaulliam	...	4	...	1	1	2	3	11
	Total ...	2	41	3	88	36	41	214	425
4	Gunpowder Mills	...	...	...	...	...	...	...	...
	Perambore	...	7	...	10	5	7	62	91
	Viasarapandy	...	1	...	5	4	2	24	36
	Total ...	...	8	...	15	9	9	86	127
5	Choolay	...	4	...	16	6	6	69	101
	Pursewalkum	...	19	1	34	21	26	148	249
	Pereamettoo	...	...	...	7	...	...	28	35
	New Town	...	1	...	6	4	4	18	33
	Vepery	...	...	1	6	3	4	22	36
	Poodoopettah	...	...	...	2	6	2	16	26
	Egmore	...	1	...	4	2	5	42	54
	Comaleeswarapooram	...	5	1	10	6	3	15	40
	Total ...	...	30	3	85	48	50	358	574
6	Kilpaukum	...	...	...	1	3	1	10	15
	Chetput	...	...	...	...	6	2	4	12
	Nungumbaukum	...	...	...	9	13	6	23	51
	Mackay's Garden	...	6	...	9	5	2	18	40
	Total ...	...	6	...	19	27	11	55	118
7	Poodoopaukum	...	1	1	10	4	3	34	53
	Chintadripettah	...	2	...	26	13	11	80	132
	Narasingapooram	...	...	...	2	6	...	5	13
	Triplicane	1	19	3	45	16	14	264	362
	Theroovateeswaranpettah ...	1	3	...	2	...	1	14	21
	Total ...	2	25	4	85	39	29	397	581
8	St. Thomé	...	9	...	27	23	10	122	191
	Alwarpettah	...	...	...	...	1	...	1	2
	Royapettah	1	4	...	19	5	4	38	71
	Meer Saib's Pettah	...	...	...	8	5	3	27	43
	Kistnampettah	...	1	...	5	2	1	16	25
	Thanampettah	...	...	...	8	1	3	21	33
	Total ...	1	14	...	67	37	21	225	365
	General Total ...	5	170	11	587	253	288	2,034	3,348

TABLE IX.

Table showing the average Deaths in Madras during the 1st quarters of 10 *previous years ending* 1871 *as contrasted with the Mortality of the* 1st *quarter of* 1872.

		Small-pox.	Measles.	Fevers.	Dysentery.	Diarrhœa.	Cholera.	Other diseases.	Total.	Order of Salubrity.
1st Quarter of	1862	545	14	521	272	232	1,139	1,189	3,912	11th
	1863	33	6	524	338	265	1,279	1,338	3,783	10th
	1864	108	4	611	350	216	349	1,487	3,125	5th
	1865	6	...	444	272	246	247	1,379	2,594	2nd
	1866	28	1	541	337	267	321	1,465	2,960	4th
	1867	98	5	697	484	277	600	1,554	3,715	9th
	1868	372	50	524	306	223	11	1,656	3,142	6th
	1869	16	3	476	191	108	...	1,672	2,466	1st
	1870	2	3	608	227	156	61	1,674	2,731	3rd
	1871	61	39	682	253	169	44	1,920	3,168	7th
	Total ...	1,269	125	5,628	3,030	2,159	4,051	15,334	31,596	......
	Average...	126·9	12·5	562·8	303·0	215·9	405·1	1533·4	3159·6	......
Do. of	1872	170	11	587	253	288	5	2,034	3,348	8th
	Increase ...	43·1	...	24·2	...	72·1	...	500·6	188·4	......
	Decrease ...	...	1·5	...	50·0	...	400·1	......	......	......

TABLE X.

Return of Births among all Classes in the year 1871-72, arranged according to months.

	Born alive.											Still-born.											
	Europeans.		East Indians.		Hindoos.		Mahomedans.		Total.		Total of both Males and Females.	Europeans.		East Indians.		Hindoos.		Mahomedans.		Total.		Total of both Males and Females.	Total Births.
	M.	F	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
April 1871	3	7	10	17	355	257	33	24	401	305	706	...	...	...	1	7	6	2	1	9	8	17	723
May "	2	2	15	17	316	268	33	31	366	318	684	...	...	1	...	9	1	...	4	10	5	15	699
June "	6	2	19	23	433	385	48	32	506	442	948	...	...	...	2	4	10	1	2	5	4	19	967
July "	6	6	11	9	370	293	46	26	433	334	767	...	...	...	...	7	4	5	1	12	5	17	784
August "	2	3	17	17	413	338	33	25	465	383	848	...	...	...	...	6	4	1	...	7	4	11	859
September "	2	4	14	37	309	296	28	26	353	363	716	...	...	...	...	10	4	1	1	11	5	16	732
October "	11	6	24	32	313	249	28	30	376	317	693	...	...	...	1	12	4	1	2	13	7	20	713
November "	1	2	9	18	288	248	18	20	316	288	604	...	...	...	...	7	12	2	1	9	13	22	626
December "	9	7	11	20	222	207	25	16	267	250	517	...	...	...	...	3	1	...	...	3	1	4	521
January 1872	4	6	20	11	233	200	24	17	281	234	515	...	...	...	...	4	11	3	...	7	11	18	533
February "	2	2	14	5	300	260	30	20	346	287	633	...	...	...	...	7	3	...	1	7	4	11	644
March "	8	3	22	14	308	237	24	17	362	271	633	...	...	1	...	3	4	...	...	4	4	8	641
Total ...	56	50	186	220	3,860	3,238	370	284	4,472	3,792	8,264	...	...	2	4	79	64	16	13	97	81	178	8,442

TABLE XI.

Births Registered in the town of Madras for the year 1871-72, arranged according to Caste and Divisions.

Municipal Division.	Names of Villages.	Born alive. Europeans. M.	F.	East Indians. M.	F.	Hindoos. M.	F.	Mahomedans. M.	F.	Total. M.	F.	Total of both Males and Females.	Still born. Europeans. M.	F.	East Indians. M.	F.	Hindoos. M.	F.	Mahomedans. M.	F.	Total. M.	F.	Total of both Males and Females.	Total Births.
1	Tondiarpettah	...	...	...	...	27	25	1	...	28	25	53	...	...	...	...	1	...	...	...	1	......	1	54
	Washerman's Pettah... ...	...	...	...	2	122	136	39	26	161	164	325	...	...	...	...	1	2	3	...	4	2	6	331
	Monegar Choultry	...	...	...	...	...	...	...	...	...	...	......	...	...	...	...	...	...	...	...	......	......	......	......
	Royapooram	5	6	9	12	53	46	6	4	73	68	141	...	...	...	...	1	...	...	...	1	......	1	142
	Cashmode	...	...	1	2	29	22	4	2	34	26	60	...	...	...	...	1	1	...	1	1	2	3	63
	Total...	5	6	10	16	231	229	50	32	296	283	579	...	...	...	...	4	3	3	1	7	4	11	590
2	Peddoo Naick's Pettah ...	1	...	5	14	1,111	871	26	17	1,143	902	2,045	...	...	1	...	16	4	...	...	17	4	21	2,066
	Big Parcherry	2	1	8	13	4	2	1	7	15	23	38	...	...	...	1	...	...	...	...	......	1	1	39
	John Pereira's Garden ...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	......	......	......	1
	Total...	3	1	13	28	1,115	873	27	24	1,158	926	2,084	...	...	1	1	16	4	...	...	17	5	22	2,106
3	Fort Saint George	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	......	......	......	1
	Moottealpettah	6	4	47	40	405	281	33	18	491	343	834	...	...	...	1	5	5	1	...	6	6	12	846
	Uttapauliam	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	......	......	......	1
	Total...	6	4	47	41	406	281	33	18	492	344	836	..	...	...	1	5	5	1	...	6	6	12	848
4	Gunpowder Mills	...	...	2	1	8	8	...	...	10	9	19	...	...	...	...	...	...	...	...	......	......	......	19
	Perambore	1	1	4	6	151	125	33	28	189	160	349	...	...	...	...	5	4	1	1	6	5	11	360
	Viasarapandy	...	...	...	...	48	43	...	...	48	43	91	...	...	...	...	4	3	...	...	4	3	7	98
	Total...	1	1	6	7	207	176	33	28	247	212	459	...	...	...	...	9	7	1	1	10	8	18	477
5	Choolay	...	...	1	...	138	115	5	8	144	123	267	...	...	...	...	1	...	...	...	1	......	1	268
	Pursewaukum	2	6	14	10	256	218	5	11	277	245	522	...	...	...	...	9	10	...	...	9	10	19	541
	Pareamettoo	...	...	2	4	37	30	3	5	42	39	81	...	...	...	...	...	...	...	...	......	......	......	81
	New Town	1	3	5	10	6	6	1	1	13	20	33	...	...	...	...	...	...	...	...	......	......	......	33
	Vepery	5	4	5	6	11	21	6	5	27	36	63	...	...	...	...	...	...	...	1	......	1	1	64
	Poodoopettah	...	...	3	1	42	35	3	...	48	36	84	...	...	...	...	...	...	...	...	......	......	......	84
	Egmore	24	19	65	71	600	515	19	8	708	613	1,321	...	...	1	2	11	8	1	1	13	11	24	1,345
	Coomaleeswarpooram... ...	...	...	...	1	41	42	1	...	42	43	85	...	...	...	...	1	1	1	...	2	1	3	88
	Total...	32	32	95	103	1,181	982	43	38	1,301	1,155	2,456	...	...	1	2	22	19	2	2	25	23	48	2,504

Births Registered.—(Continued.)

Municipal Division.	Names of Villages	Born Alive. Europeans M.	Born Alive. Europeans F.	Born Alive. East Indians M.	Born Alive. East Indians F.	Born Alive. Hindoos M.	Born Alive. Hindoos F.	Born Alive. Mahomedans M.	Born Alive. Mahomedans F.	Born Alive. Total M.	Born Alive. Total F.	Total of both Males and Females.	Still Born. Europeans M.	Still Born. Europeans F.	Still Born. East Indians M.	Still Born. East Indians F.	Still Born. Hindoos M.	Still Born. Hindoos F.	Still Born. Mahomedans M.	Still Born. Mahomedans F.	Still Born. Totals M.	Still Born. Totals F.	Total of both Males and Females.	Total Births.
6	Kilpaukum	2	...	..	1	3	4	...	.	5	5	10	...	...	...	...	...	...	...	...	......	......	......	10
	Chetput		..	1	..	10	12	..	...	11	12	23	...	...	...	...	...	1	...	...	......	1	1	24
	Nungambaukum ...	2	2	...	...	78	73	1	. .	81	75	156	...	...	..	...	1	4		...	1	4	5	161
	Mackay's Garden... ...		...	...	...	14	12	1	1	15	13	28	...	...	...	...	4	3	..	...	4	3	7	35
	Total...	4	2	1	1	105	101	2	1	112	105	217	...	...	...	...	5	8	...	...	5	8	13	230
7	Po doopaukum ...		1	1	...	32	24	2	4	35	29	64	...	...	...	...	..	...	...	..	......	......	......	64
	Chintadripettah			1	5	161	140	8	6	170	151	321	...	...	...	...	5	5	1	1	6	6	12	333
	Narasingapooram	...	...	2	4	6	5	8	3	16	12	28	...	..	...	...	...	...	..	..	......		......	28
	Tripl cane	..	...	4	2	189	180	120	79	313	261	574	...	...	...	...	7	6	6	5	13	11	24	598
	Theroovateeswaranpettah	...	...	...	...	14	13	7	10	21	23	44	...	...	...	...	...	...	...		......	......	......	44
	Total...		1	8	11	402	362	145	102	555	476	1,031	...	...	...	...	12	11	7	6	19	17	36	1,067
8	St. Thomé	3	2	1	3	128	124	6	13	138	141	279	...	...	...	...	4	3	...	...	4	3	7	286
	Alwarpettah	...	...	...	...	5	1	...	...	5	1	6		...	..	...	...	...	...	...	......	......	......	6
	Royapettah	1	1	5	10	65	45	13	13	84	68	152	...	...	...	...	.	...	1	1	1	1	2	154
	Meersaib's Pettah ...	...	...	...	...	28	21	12	9	40	30	70	...	...	...	...	2	1	1	2	3	3	6	76
	Kistnampettah	...	...	...	...	14	16	3	6	17	22	39	...	...	...	...	...	2	...	...	......	2	2	41
	Thanampettah	1	..	..	...	23	27	3	2	27	29	56	...	...		...	...	1		...	......	1	1	57
	Total...	5	3	6	13	268	234	37	41	311	291	602	...	..	...	...	6	7	2	3	8	10	18	620
	General Total...	56	50	186	220	3,860	3,238	370	284	4,472	3,792	8,264	...	...	2	4	79	64	16	13	97	81	178	8,442

TABLE XII.

Return of Births in the Town of Madras for the 1st Quarter of 1872.

Municipal Division.	Names of Villages.	Born alive. Europeans. M	F	East Indians. M	F	Hindoos. M	F	Mahomedans. M	F	Total. M	F	Total of both Males and Females.	Still-born. Europeans. M	F	East Indians. M	F	Hindoos. M	F	Mahomedans. M	F	Total. M	F	Total of both Males and Females	Total Births
1	Tondiarpettah ...	.	...	...	...	3	4	1	...	4	4	8	...	...	...	...	1	..	..	..	1	...	1	9
	Washerman's Pettah ...	...	...	...	...	37	38	12	7	49	45	94	...	...	...	...	...	1	1	..	1	1	2	96
	Monegar Choultry ...	...	...	...	...	...	...	...	...	...	..	......	...	...	...	...	...	..	...	...	...	...	...	...
	Royapooram ...	2	2	2	2	8	15	1	2	13	21	34	...	...	...	...	...	..	...	...	...	...	...	34
	Cashmode ...	...	...	...	1	4	6	1	1	5	8	13	...	...	...	...	...	1	...	...	..	1	1	14
	Total...	2	2	2	3	52	63	15	10	71	78	149	..	...	...	..	1	2	1	...	2	2	4	153
2	Peddoo Naick's Pettah ...	..	...	3	1	249	205	1	5	253	211	464	...		1	.	3	1	...	...	4	1	5	469
	Big Parcherry ...	1	...	...	2	1	...	...	...	2	2	4	...	...	...	...	...	..	...	...	...	...	...	4
	John Pereira's Garden ...	...	...	...	...	...	...	...	...	...	...	......	...	...	...	...	.	...	...	...	...	...	...	...
	Total...	1	...	3	3	250	205	1	5	255	213	468	..	...	1	...	3	1	..	...	4	1	5	473
3	Fort St. George ...	...	...	.	...	...	...	...	...	.	...	......	...	...	...	...	...	...	...	...	...	...	...	...
	Moottealpettah ...	...		13	5	48	83	...	...	61	38	99	...	...	...	...	2	2	...	...	2	2	4	103
	Uttapauliam ...	..	...	...	...	1	...	...	...	1	...	1	.	..	...	...	...	...	...	...	.	...	...	1
	Total...	...	...	13	5	49	83	...	...	62	38	100	...	...	...	...	2	2		...	2	2	4	104
4	Gunpowder Mills ...	...	...	1	1	2	1	...	...	3	2	5	...	...	...	...	...	...	...	...	...	...	...	5
	Perambore ...	1	...	1	...	39	36	8	11	49	47	96	...	...	...	...	1	1	...	...	1	1	2	98
	Viasarapaudy ...	...	...	...	.	10	19	.	...	10	19	29	...	...	...	...	2	1	..	...	2	1	3	32
	Total...	1	...	2	1	51	56	8	11	62	68	130	...	...	...	...	3	2	..	..	3	2	5	135
5	Choolay ...	...	...	..	...	30	22	2	1	32	23	55	...	...	...	...	...	...	...	...	...	.	...	55
	Pursewalkum ...	1	1	6	3	68	46	...	1	75	51	126	...	...	...	...	1	3	...	...	1	3	4	130
	Pereamettoo ...	...	...	..	...	6	4	1	1	7	5	12	...	...	...	...	...	...	...	...	...	...	...	12
	New Town ...	...	...	1	1	3	2	...	...	4	3	7	...	...	...	...	...	...	...	...	...	...	...	7
	Vepery ...	1	1	1	1	1	...	1	1	4	3	7	...	..	...	...	...	...	.	...	...	...	...	7
	Poodoopettah ...	..	...	1	..	8	7	...	...	9	7	16	...	...	...	...	...	...	...	...	...	...	...	16
	Egmore ...	7	4	22	9	134	106	5	2	168	121	289	...	...	..	...	1	1	..	...	1	1	2	291
	Comaleeswarpooram ...	...	...	...	..	8	13	1	...	9	13	22	...	..	...	...	...	...	1	.	1	...	1	23
	Total...	9	6	31	14	258	200	10	6	308	226	534	...	...	...	...	2	4	1	...	3	4	7	541
6	Kilpaukum ...	...	...	...	..	1	...	...	...	1	...	1	...	...	...	..	...	...	...	...	...	...	...	1
	Chetput ...	...	...	1	...	4	4	..	..	5	4	9	...	...	...	...	...	...	...	...	...	...	...	9
	Nungumbaukum ...	...	...	...	...	24	18	...	...	24	18	42	...	...	...	...	...	1	...	...	...	1	1	43
	Mackay's Garden ...	...	...	...	...	6	6	...	...	6	6	12	...	...	...	...	...	...	...	...	...	..	...	12
	Total...	...	...	1	...	35	28	...	...	36	28	64	...	..	...	...	...	1	..	...	...	1	1	65
7	Poodoopaukum ...	...	1	1	...	13	1	1	1	15	3	18	...	...	..	...	...	...	...	...	...	...	...	18
	Chintadripettah ...	...	...	...	2	30	29	1	1	31	32	63	...	...	...	...	1	...	...	...	1	...	1	64
	Narasingapooram ...	...	..	...	...	1	...	1	...	2	...	2	...	...	...	...	..	...	...	...	...	...	...	2
	Triplicane ...	...	...	1	1	41	33	26	10	68	41	112	...	...	...	...	1	4	...	1	1	5	6	118
	Theroovateeswaranpettah.	...	...	...	...	3	2	4	4	7	6	13	.	...	...	...	...	...	...	..	...	...	...	18
	Total...	...	1	2	3	88	65	33	16	123	85	208	...	..	...	...	2	4	...	1	2	5	7	215
6	St. Thomé ...	1	1	1	...	28	28	...	[illegible]	30	32	62	..	...	...	...	...	1	...	...	...	1	1	63
	Alwarpettah ...	...	...	...	...	1	...	..	..	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1
	Royapettah ...	..	1	1	1	12	7	5	[illegible]	18	11	29	...	...	...	...	...	...	1	...	1	...	1	30
	Meersaib's Pettah ...	...	...	...	...	9	6	3		12	6	18	...	...	...	...	1	1	...	...	1	1	2	20
	Kistnampettah ...	...	...	...	.	3	3	2	1	5	4	9	...	...	...	...	...	...	...	...	...	...	...	9
	Thanampettah ...	...		...	...	5	3	1	.	6	3	9	...	..	..	...	...	...	...	...	...	...	...	9
	Total...	1	2	2	1	58	47	11	6	72	56	128	...	...	...	...	1	2	1	...	2	2	4	132
	General Total...	14	11	56	30	841	697	78	54	989	792	1,781	...	...	1	...	14	18	3	1	18	19	37	1,818

TABLE XIII.

1871-72.

Return of Vaccination, Madras Collectorate and Vaccine Depôt, for the official year ending 31st March 1872.

Received from the Vaccine Department.

District.	Total No. Vaccinated.	Successful.	Unsuccessful.	Unknown.	Remarks.
Madras Collectorate	6,039	5,846	152	41	
Vaccine Depôt	2,320	2,243	64	13	
Temporary Establishment... ...	82	75	7	...	
Total ...	8,441	8,164	223	54	

TABLE XIV.

Comparative Statement of Special and other Diseases in each District of Madras for the years 1859-70.

Municipal Divisions.	Names of Villages.	1859. Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.	1860. Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.
1	Tondiarpettah ...	10	...	23	25	19	74	151	...	...	9	14	3	40	66
	Washerman's Pettah.	5	..	55	46	87	143	286	12	1	108	95	64	186	461
	Monegar Choultry...	2	...	8	53	3	109	175	...	...	20	89	6	96	161
	Royapooram ...	14	...	71	35	7	151	278	6	1	67	83	85	128	320
	Cashmode ...	5	...	25	86	13	85	164	...	...	23	46	43	126	238
2	Peddoo Naick's Pettah ...	206	...	686	237	203	1,225	2,557	49	1	724	546	575	1,499	3,394
	Big Parcherry ...	1	...	...	8	4	13	21	...	...	1	1	7	21	30
	John Pereira's Garden	2	...	18	9	7	43	79	...	...	2	2	2	13	19
3	Fort St. George ...	...	...	1	1	...	3	5	...	...	1	...	1	6	8
	Mootteálpettah ...	74	1	211	78	70	425	859	29	1	224	141	136	483	1,014
	Uttapaulium ...	...	..	2	1	1	15	19	...	...	1	...	1	17	19
4	Gunpowder Mills ...	1	...	...	1	2	1	5	...	...	4	...	..	11	15
	Perambore ...	4	...	17	14	4	48	87	1	...	12	9	15	25	62
	Vasarapaudy ...	7	...	5	20	52	36	120	...	...	16	7	8	20	51
5	Choolay ...	14	...	59	72	21	216	382	14	1	100	89	98	217	519
	Pursewalkum ...	14	...	87	81	39	207	428	14	...	100	104	82	200	500
	Pareamettoo ...	20	...	114	69	46	141	390	11	...	79	68	103	112	367
	New Town ...	2	...	5	7	2	14	30	...	...	7	4	9	31	51
	Vepery ...	1	...	12	14	3	88	68	...	...	16	16	40	47	119
	Poodoopettah ...	6	...	15	11	3	37	72	2	...	17	26	29	63	137
	Egmore ...	4	...	28	23	2	89	146	...	...	35	40	38	75	188
	Comaleeswarpooram	7	...	36	27	11	96	177	5	...	47	56	47	97	252
6	Kilpaukum ...	1	...	4	11	5	23	44	...	...	16	8	16	26	66
	Chetpat ...	...	...	2	3	4	14	23	...	...	11	12	4	53	80
	Nungumbaukum ...	...	...	80	65	15	30.	467	8	...	69	176	81	341	625
	Mackay's Garden ...	2	...	...	5	1	7	15	...	...	7	3	1	40	51
6	Poodoopaukum ...	2	...	13	10	7	32	64	...	...	15	4	16	28	63
	Chintadripettah ..	28	...	108	102	29	283	549	30	...	105	181	162	350	828
	Narasingapooram ...	1	...	4	8	3	16	27	1	...	2	1	7	19	30
	Triplicane ...	25	...	463	74	833	630	1,525	21	1	332	249	583	857	2,048
	Therooyateeswaran-pettah ...	...	...	4	4	2	11	21	...	...	5	2	..	12	19
8	St. Thomè ...	12		185	126	81	410	815	81	4	200	238	297	402	1,172
	Atwarpettah ...	1	...	1	5	...	8	15	1	1	11	5	10	18	.46
	Royapettah .	1	...	15	15	82	48	111	8	1	28	30	48	60	170
	Meersaib's Pettah ...	1	..	10	2	3	20	36	1	...	18	13	31	26	99
	Kistnampettah ...	...	...	7	3	3	10	23	1	...	5	11	16	39	72
	[illegible]hanampettah ...	...	...	9	6	15	28	53	5	...	27	24	17	70	148
	Total ...	473	2	2,378	1,297	1,032	5,060	10,292	245	12	2,459	2,338	2,580	5,864	13,498

Municipal Divisions.	Names of Villages.	1861. Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.	1862. Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.
1	Tondiarpettah ...	7	...	25	20	34	34	120	4	...	7	6	24	24	65
	Washerman's Pettah.	8	1	45	58	104	104	315	20	4	40	45	203	109	431
	Monegar Choultry...	1	...	8	61	38	88	196	...	...	3	94	49	94	240
	Royapooram ...	26	2	66	45	173	111	423	52	2	53	60	293	150	610
	Cashmode ...	6	1	36	17	102	72	234	27	1	35	48	105	119	335
2	Peddoo Naick's Pettah ...	240	18	702	584	1,048	1,382	3,974	348	15	779	590	950	1,549	4,231
	Big Parcherry ...	5	...	7	11	14	28	65	19	...	23	28	96	71	237
	John Pereira's Garden	1	...	4	10	7	36	58	1	...	6	12	21	24	64
3	Fort St. George ...	...	...	2	2	...	12	16	...	...	1	6	3	12	22
	Mootteálpettah ...	70	2	223	177	283	428	1,183	85	3	195	104	266	408	1,061
	Uttapaulium ...	...	...	17	3	...	...	20	...	..	...	...	1	2	3
4	Gunpowder Mills ...	..	...	...	2	...	8	10	...	...	...	...	...	2	2
	Perambore ...	3	...	11	16	17	44	91	4	...	10	15	48	48	125
	Vasarapaudy ...	2	...	7	14	30	20	73	3	...	2	3	1	7	16
5	Choolay ...	15	...	75	55	122	184	451	21	...	76	54	89	167	407
	Pursewalkum ...	18	...	112	88	228	223	669	34	1	125	86	209	274	729
	Pareamettoo ...	8	...	42	32	85	61	178	7	...	40	19	41	52	159
	New Town ...	1	1	6	11	17	42	78	...	...	2	11	18	32	63
	Vepery ...	3	...	28	26	49	65	171	5	...	16	14	45	63	143
	Poodoopettah ...	2	...	14	16	10	26	68	8	...	22	19	24	43	116
	Egmore ...	2	...	33	20	9	35	99	7	...	25	21	33	38	124
	Comaleeswarpooram	12	...	35	59	33	57	196	13	...	44	59	58	66	240
6	Kilpaukum ...	3	...	3	11	9	22	48	3	...	3	11	7	25	49
	Chetpat ...	5	...	18	6	...	25	49	1	...	12	12	1	45	71
	Nungumbaukum ...	24	...	71	140	30	330	595	21	1	91	163	29	266	571
	Mackay's Garden ...	...	...	1	2	1	10	14	8	...	17	19	8	62	104
6	Poodoopaukum ...	10	...	8	10	4	40	72	7	...	11	16	5	16	55
	Chintadripettah ..	36	5	139	167	86	270	703	54	...	183	215	238	292	982
	Narasingapooram ...	...	..	...	5	6	18	29	2	...	1	8	8	21	40
	Triplicane ...	48	1	180	387	124	955	1,690	172	...	209	241	615	907	2,144
	Therooyateeswaran-pettah ...	...	...	1	1	...	3	5	...	...	1	...	...	1	2
8	St. Thomè ...	77	...	187	206	104	474	1,048	70	...	140	144	80	368	802
	Atwarpettah ...	...	...	4	3	...	8	15	1	...	...	3	...	13	17
	Royapettah .	10	...	21	19	40	55	145	22	...	25	31	26	68	172
	Meersaib's Pettah ...	2	...	6	4	4	19	35	2	...	5	2	8	14	31
	Kistnampettah ...	3	...	18	12	7	18	53	5	...	14	8	10	27	64
	[illegible]hanampettah ...	17	...	24	34	8	98	181	12	...	19	36	28	119	214
	Total ...	655	31	2,169	2,384	2,776	5,405	13,870	1,038	27	2,285	2,203	3,685	5,598	14,731

TABLE XIV.—(*Continued.*)

Comparative Statement of Special and other Diseases in each District of Madras for the years 1859-70.

Municipal Divisions.	Names of Villages.	1863. Small-Pox.	1863. Measles.	1863. Fevers.	1863. Bowel Complaint.	1863. Cholera.	1863. Other Diseases.	1863. Total.	1864. Small-Pox.	1864. Measles.	1864. Fevers.	1864. Bowel Complaint.	1864. Cholera.	1864. Other Diseases.	1864. Total.
	Tondiarpettah ...	...	...	2	7	3	8	20	1	...	7	4	1	19	32
	Washerman's Pettah ...	6	...	60	60	36	160	322	6	...	52	51	70	147	326
1	Monegar Choultry ...	...	...	7	97	19	175	298	...	...	7	82	5	171	265
	Rovapooram	2	...	48	43	14	136	243	3	2	38	29	20	117	209
	Cashmode	...	...	22	27	17	69	135	2	...	29	36	7	59	133
	Peddoo Naick's Pettah ...	43	3	778	585	725	1,445	3,579	69	2	735	517	107	1,389	2,819
2	Big Parcherry ...	3	...	28	36	25	82	174	8	1	37	36	5	85	167
	John Pereira's Garden ...	1	...	7	9	14	28	59	...	...	...	3	3	17	23
	Fort Saint George ...	...	...	2	3	7	17	29	...	...	1	3	2	10	16
3	Mootealpettah ...	19	4	185	131	110	514	963	21	...	175	160	47	450	853
	Uttapauliam	...	...	...	...	...	1	1	...	...	1	...	...	...	1
	Gunpowder Mills ...	...	...	...	...	...	...	...	...	...	...	1	1	2	4
4	Perambore	...	...	17	18	15	48	98	3	...	12	15	4	49	83
	Viasarapaudy... ...	...	...	6	5	9	5	25	...	...	4	5	3	11	23
	Choolay	...	...	51	41	47	174	313	1	...	51	35	16	105	208
	Pursewalkum	...	...	126	104	132	314	676	4	2	150	130	17	284	587
	Pareamettoo	1	...	22	22	18	38	101	1	...	22	26	16	56	121
5	New Town	1	1	1	15	3	27	48	...	...	4	6	26	36	72
	Vepery	...	...	12	16	22	52	102	1	1	26	12	38	81	159
	Poodoopettah	1	...	16	23	15	59	114	5	...	8	15	1	51	80
	Egmore	2	1	17	12	16	51	99	1	...	14	21	4	43	83
	Comaleeswarpooram ...	2	...	23	30	32	60	147	1	...	38	29	...	36	104
	Kilpaukum	...	...	1	8	7	13	29	...	...	3	12	...	24	39
6	Chetput	...	...	14	22	5	89	180	...	...	14	49	...	97	160
	Nungumbaukum ...	3	...	54	114	14	151	336	...	...	48	86	6	144	284
	Mackay's Garden ...	...	...	14	41	7	49	111	2	...	15	34	6	32	89
	Poodoopaukum ...	...	...	20	43	4	67	134	3	...	42	81	2	156	234
	Chintadrepettah ...	6	1	169	189	111	247	723	7	...	136	151	18	228	540
7	Narasingapooram ...	...	...	4	4	2	9	19	...	...	5	5	2	31	43
	Triplicane	7	...	201	233	171	973	1,585	18	...	222	170	52	915	1,377
	Theroovateeswaranpettah..	...	...	...	...	...	1	1	...	...	...	...	...	...	...
	St. Thomé	7	...	117	113	45	418	700	2	1	110	95	48	387	643
	Alwarpettah	...	...	8	9	...	7	19	...	...	6	6	...	11	23
8	Royapettah	4	...	40	39	6	82	271	11	...	86	30	19	127	228
	Meersaib's Pettah ...	4	...	5	8	10	32	59	...	...	7	10	11	47	75
	Kistnampettah ...	...	...	8	5	11	49	73	4	...	7	14	5	53	83
	Thanampettah ...	...	...	37	42	12	131	222	4	...	21	37	12	104	178
	Total ...	112	10	2,117	2,154	1,684	5,781	11,858	173	9	2,083	1,996	574	5,574	10,469

Municipal Divisions.	Names of Villages.	1865. Small-Pox.	1865. Measles.	1865. Fevers.	1865. Bowel Complaint.	1865. Cholera.	1865. Other Diseases.	1865. Total.	1866. Small-Pox.	1866. Measles.	1866. Fevers.	1866. Bowel Complaint.	1866. Cholera.	1866. Other Diseases.	1866. Total.
	Tondiarpettah ...	...	...	6	3	2	13	24	...	...	6	5	55	15	81
	Washerman's Pettah ...	3	...	92	110	59	236	500	12	...	136	142	223	246	759
1	Monegar Choultry ...	...	...	5	88	10	210	313	...	...	5	105	86	266	462
	Rovapooram	...	...	30	30	13	132	205	6	...	30	35	125	143	339
	Cashmode	...	...	18	18	16	56	108	4	...	25	24	110	85	248
	Peddoo Naick's Pettah ...	26	...	744	579	172	1,208	2,729	43	...	592	459	377	1,113	2,584
2	Big Parcherry ...	...	...	33	43	9	89	174	14	...	34	55	80	97	280
	John Pereira's Garden ...	...	...	2	5	6	19	32	...	...	1	6	23	34	64
	Fort Saint George ...	...	...	...	1	...	7	8	...	...	6	6	10	15	37
3	Mootealpettah ...	4	...	148	159	37	447	795	6	1	203	182	122	456	970
	Uttapauliam	...	...	4	1	...	...	5	1	...	16	29	35	25	106
	Gunpowder Mills ...	...	...	...	...	...	1	1	...	...	...	...	...	1	1
4	Perambore	...	...	35	17	32	56	140	2	...	15	17	66	61	161
	Viasarapaudy... ...	...	...	7	5	...	8	20	...	...	5	6	34	4	49
	Choolay	...	...	66	35	19	110	230	1	...	73	51	82	145	352
	Pursewalkum	3	...	176	116	86	325	706	...	...	214	139	268	434	1,055
	Pareamettoo	2	...	51	38	26	83	200	...	...	36	35	87	64	222
5	New Town	...	...	5	15	9	40	69	1	...	6	8	28	44	87
	Vepery	...	...	51	19	6	84	130	...	...	20	30	61	72	183
	Poodoopettah	...	...	19	23	5	78	125	...	...	14	23	44	52	133
	Egmore	...	...	19	24	14	33	90	...	1	21	22	28	48	120
	Comaleeswarpooram ...	2	...	11	28	10	61	112	...	...	27	26	14	46	113
	Kilpaukum	...	...	5	15	4	17	41	...	...	6	5	20	20	51
6	Chetput	...	...	26	85	1	103	215	...	...	23	52	6	128	209
	Nungumbaukum ...	...	...	57	127	15	196	395	4	...	56	123	41	181	405
	Mackay's Garden ...	...	...	24	61	11	58	154	1	...	25	57	62	108	253
	Poodoopaukum ...	1	...	26	69	20	82	198	...	...	38	61	44	117	260
	Chintadrepettah ...	...	...	157	224	125	282	788	...	...	144	187	166	270	767
7	Narasingapooram ...	...	...	5	12	15	27	59	...	...	7	16	35	37	95
	Triplicane	1	...	208	98	122	1,028	1,457	4	...	189	147	330	1,020	1,690
	Theroovateeswaranpettah..	...	...	1	...	...	2	3	...	...	2	3	8	14	27
	St. Thomé	...	...	111	78	54	402	645	2	...	156	106	167	483	914
	Alwarpettah	1	...	...	2	...	3	6	...	...	2	2	...	3	7
8	Royapettah	...	...	34	36	18	131	219	2	...	64	41	46	127	280
	Meersaib's Pettah ...	...	...	9	5	8	40	62	...	...	15	15	32	74	136
	Kistnampettah ...	1	...	11	8	8	61	89	...	...	18	18	23	81	140
	Thanampettah ...	...	...	24	44	12	89	169	...	...	26	27	46	142	241
	Total ...	44	...	2,190	2,221	944	5,817	11,216	103	2	2,256	2,265	2,984	6,271	13,881

TABLE XIV.—(*Continued.*)

Comparative Statement of Special and other Diseases in each District of Madras for the years 1859-70.

Municipal Divisions.	Names of Villages.	1867. Small-Pox.	1867. Measles.	1867. Fevers.	1867. Bowel Complaint.	1867. Cholera.	1867. Other Diseases.	1867. Total.	1868. Small-Pox.	1868. Measles.	1868. Fevers.	1868. Bowel Complaint.	1868. Cholera.	1868. Other Diseases.	1868. Total.
1	Tondiarpettah... ...	1	2	17	14	5	80	69	4	...	34	10	...	69	117
	Washerman's Pettah ...	20	2	174	151	62	291	700	47	4	179	88	...	387	705
	Monegar Choultry ...	1	2	2	91	9	180	285	...	...	3	51	3	137	194
	Royapoorum	29	...	56	80	27	112	254	17	3	103	42	1	255	421
	Cashmode	25	...	57	65	10	122	279	9	...	65	29	...	129	232
2	Peddoo Naick's Pettah ...	142	4	640	444	46	1,021	2,297	89	10	685	319	2	1,495	2,550
	Big Parcherry ...	23	3	41	52	9	92	220	23	...	31	16	...	122	192
	John Pereira's Garden ...	3	...	4	4	2	25	38	...	...	1	3	...	13	17
3	Fort St. George ...	...	...	3	2	1	24	30	...	...	2	...	...	7	9
	Mootteal pettah ...	80	5	230	163	58	451	987	40	...	212	117	5	561	945
	Uttapauliam	11	...	19	39	3	55	127	14	...	33	14	1	47	109
4	Gunpowder Mills ...	...	...	...	...	...	3	3	...	...	...	1	...	...	1
	Perambore	11	...	20	17	10	72	180	8	...	28	35	...	117	188
	Viasarapaudy	...	...	2	4	...	5	11	4	...	1	16	...	37	58
5	Choolay	11	...	133	47	11	194	396	25	...	59	73	...	254	411
	Pursewalkum	40	1	282	132	13	480	898	57	3	132	136	...	516	844
	Pareamettoo	18	...	88	88	4	83	181	8	...	48	41	...	110	202
	New Town	2	...	6	12	3	43	66	2	...	7	9	...	37	55
	Vepery	5	1	32	15	6	105	164	4	...	25	26	...	87	142
	Poodoopettah	7	...	6	26	3	72	114	12	...	29	50	...	104	195
	Egmore	2	...	8	11	1	41	63	5	...	16	28	...	88	137
	Comaleeswarpooram ...	3	...	15	19	3	29	69	10	...	19	22	...	40	91
6	Kilpaukum	...	...	3	6	1	17	27	2	...	7	5	...	56	70
	Chetput	2	...	9	41	5	97	154	4	...	3	23	...	64	94
	Nungumbaukum ...	3	...	39	111	24	150	327	15	...	20	57	...	85	177
	Mackay's Garden ...	2	...	23	64	12	126	227	16	...	14	40	...	75	145
7	Poodoopaukum ...	9	1	36	111	13	163	333	15	4	28	67	...	146	260
	Chintadrepettah ...	16	...	126	186	15	246	589	28	...	74	112	...	353	567
	Narasingapooram ...	3	...	9	16	13	56	97	4	...	12	12	...	44	72
	Triplicane	87	4	189	141	88	1,055	1,564	187	22	175	189	1	996	1,520
	Theroovateeswaranpettah..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	St. Thomé	40	9	185	121	76	427	858	109	15	146	100	...	484	804
	Alwarpettah	...	...	1	2	1	...	4	5	...	1	7	...	9	22
	Royapettah	17	7	41	43	43	110	261	23	6	38	82	...	189	238
	Meersaib's Pettah ...	4	1	19	22	22	56	124	13	4	14	11	...	78	115
	Kistnampettah ...	4	...	16	31	8	61	120	36	12	15	17	...	71	151
	Thanampettah ...	2	...	25	48	7	152	229	14	2	28	33	...	85	162
	Total...	623	42	2,456	2,264	614	6,246	12,245	799	85	2,232	1,831	18	7,242	12,202

Municipal Divisions.	Names of Villages.	1869. Small-Pox.	1869. Measles.	1869. Fevers.	1869. Bowel Complaint.	1869. Cholera.	1869. Other Diseases.	1869. Total.	1870. Small-Pox.	1870. Measles.	1870. Fevers.	1870. Bowel Complaint.	1870. Cholera.	1870. Other Diseases.	1870. Total.
1	Tondiarpettah... ...	8	...	29	41	28	68	169	...	...	46	34	8	102	185
	Washerman's Pettah ...	...	1	129	69	24	333	556	2	...	200	92	50	331	675
	Monegar Choultry ...	...	...	4	56	32	203	295	...	...	3	68	23	240	329
	Royapoorum	10	...	92	46	27	262	437	1	...	78	47	24	202	352
	Cashmode	2	...	39	26	12	178	257	1	...	47	24	15	188	225
2	Peddoo Naick's Pettah ...	13	...	640	217	90	1,493	2,453	...	...	687	258	121	1,364	2,875
	Big Parcherry ...	...	...	16	18	12	66	112	...	...	18	12	18	58	101
	John Pereira's Garden ...	...	...	3	...	...	20	23	...	...	3	3	1	23	30
3	Fort St. George ...	...	...	...	3	...	11	14	...	...	...	...	...	6	6
	Mootteal pettah ...	3	...	156	75	27	461	722	2	1	215	99	27	591	935
	Uttapauliam	...	...	1	...	...	3	4	...	...	2	3	1	1	7
4	Gunpowder Mills ...	...	...	...	...	...	5	5	...	...	...	...	...	1	1
	Perambore	...	...	25	46	6	142	219	...	...	43	54	36	208	341
	Viasarapaudy	1	...	1	6	...	28	36	...	...	9	11	...	46	66
5	Choolay	...	...	71	83	48	237	439	1	...	79	67	50	270	167
	Pursewalkum	1	...	120	183	89	504	847	1	...	160	194	94	563	1,012
	Pareamettoo	...	1	35	28	5	128	197	1	1	25	40	16	96	179
	New Town	...	...	18	14	4	42	78	2	1	4	9	4	19	36
	Vepery	1	...	19	30	41	138	229	1	1	26	21	21	107	177
	Poodoopettah	1	2	24	30	41	96	194	1	...	21	15	1	106	144
	Egmore	...	...	19	33	18	293	358	...	...	19	36	4	211	270
	Comaleeswarpooram ...	...	...	15	15	4	47	81	...	...	23	18	11	52	99
6	Kilpaukum	...	...	4	16	1	42	63	...	...	4	19	1	42	66
	Chetput	...	...	1	5	...	22	28	...	...	4	8	...	34	42
	Nungumbaukum ...	...	...	13	31	1	58	103	...	...	23	25	10	69	127
	Mackay's Garden ...	...	...	25	35	2	63	125	...	...	25	23	3	50	101
7	Poodoopaukum ...	...	...	17	23	5	123	148	...	...	31	19	18	131	199
	Chintadrepettah ...	...	...	84	82	34	259	459	...	...	84	71	27	238	420
	Narasingapooram ...	...	...	18	8	6	62	94	...	...	17	23	12	45	97
	Triplicane	1	...	187	160	36	986	1,270	...	7	170	146	94	956	1,873
	Theroovateeswaranpettah..	1	...	10	4	3	36	54	...	...	9	7	1	48	65
8	St. Thomé	1	...	146	110	12	399	668	2	1	148	69	62	410	692
	Alwarpettah	...	...	1	2	...	1	4	...	...	4	1	...	8	13
	Royapettah	...	...	42	31	13	135	221	...	...	38	36	57	167	298
	Meersaib's Pettah ...	...	...	24	11	1	61	97	...	...	26	19	13	70	128
	Kistnampettah ...	...	...	15	2	1	72	90	3	...	29	13	17	54	116
	Thanampettah ...	...	...	27	17	...	54	98	...	...	26	20	26	64	136
	Total...	38	4	2,015	1,556	568	7,061	11,262	18	12	2,296	1,589	861	7,109	11,885

TABLE XV.

Comparative Statement of Special and other Diseases in each District of Madras for the years 1859-70.

Municipal Division.	Names of Villages.	Total of 12 years.							
		Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Special Diseases.	Other Diseases.	Total.
1	Tondiarpettah	30	2	211	183	177	603	496	1,099
	Washerman's Pettah ...	136	13	1,265	1,007	932	3,353	2,673	6,026
	Monegar Choultry ...	4	2	75	880	283	1,244	1,969	3,213
	Royapooram	166	10	732	525	759	2,192	1,899	4,091
	Cashmode	81	2	421	396	450	1,350	1,238	2,588
2	Peddoo Naick's Pettah ...	1,268	53	8,292	5,330	4,416	19,359	16,183	35,542
	Big Parcherry	91	4	269	311	279	954	819	1,773
	John Pereira's Garden ...	8	...	46	66	86	206	300	506
3	Fort Saint George ...	...	...	19	27	24	70	130	200
	Moottealpettah	433	18	2,377	1,586	1,188	5,602	5,675	11,277
	Uttapauliam	26	...	96	90	43	255	166	421
4	Gunpowder Mills ...	1	...	4	5	3	13	35	48
	Perambore	36	...	245	273	253	807	918	1,725
	Viasarapaudy	17	...	65	102	137	321	227	548
5	Choolay	103	1	893	702	603	2,302	2,273	4,575
	Pursewalkum	186	7	1,734	1,493	1,207	4,627	4,324	8,951
	Pareamettoo	77	2	547	451	396	1,473	1,024	2,497
	New Town	11	3	66	121	123	324	404	728
	Vepery...	21	3	253	239	332	848	939	1,787
	Poodoopettah	45	2	205	277	176	705	787	1,492
	Egmore	23	2	254	291	162	732	1,045	1,777
	Comaleeswarpooram ...	55	...	333	383	223	994	687	1,681
6	Kilpaukum	9	...	59	127	71	266	327	593
	Chetput	12	...	132	318	26	488	767	1,255
	Nungumbaukum... ...	78	1	621	1,218	216	2,134	2,278	4,412
	Mackay's Garden ...	26	...	190	384	109	709	680	1,389
7	Poodoopaukum	47	5	285	514	138	989	1,101	2,090
	Chintadripettah	205	6	1,509	1,817	1,011	4,548	3,317	7,865
	Narasingapooram ...	11	...	84	113	109	317	385	702
	Triplicane	516	35	2,675	2,235	2,549	8,010	11,228	19,238
	Theroovateeswaranpettah ...	1	...	33	21	14	69	128	197
8	St. Thomé	353	31	1,831	1,506	1,026	4,747	5,014	9,761
	Alwarpettah	9	1	34	47	11	102	89	191
	Royapettah	93	14	422	383	348	1,260	1,249	2,509
	Meersaib's Pettah ...	27	5	158	122	143	455	542	997
	Kistnampettah	57	12	158	142	109	478	596	1,074
	Thanampettah	54	2	192	363	183	895	1,136	2,031
	Total ...	4,316	236	26,886	24,048	18,315	73,801	73,048	1,46,849

TABLE XVI.

Comparative Statement for the years 1855-70 showing the mortality of each month of the year.

	1855.							1856.						
	Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.	Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.
January ...	27	...	150	185	305	395	1,062	118	...	158	187	167	388	1,008
February ...	30	...	148	116	351	340	985	220	...	134	87	128	378	967
March ...	93	...	156	144	136	363	892	190	...	125	112	181	345	953
April ...	103	...	123	103	30	303	662	130	...	89	81	132	281	718
May ...	89	...	138	128	14	360	724	58	...	142	78	147	364	784
June ...	61	...	135	102	2	377	677	82	...	181	110	39	371	723
July ...	63	...	142	97	6	376	684	12	...	138	104	12	365	626
August ...	64	...	149	126	45	437	821	17	...	106	85	2	355	565
September ...	55	...	142	135	390	386	1,108	6	...	111	75	1	334	527
October ...	51	...	121	153	358	401	1,084	5	...	103	75	3	309	495
November ...	66	...	165	140	207	387	965	1	...	112	74	1	329	517
December ...	150	...	160	150	112	391	963	5	...	96	74	2	378	555
Total ...	852	...	1,729	1,574	1,956	4,516	10,627	789	...	1,510	1,187	805	4,192	8,438
	1857.							1858.						
January ...	5	...	126	100	4	439	674	99	...	28	48	488	314	912
February ...	14	...	100	103	152	359	728	44	...	58	85	328	294	754
March ...	15	...	84	148	161	432	840	64	...	68	65	126	368	691
April ...	26	...	75	80	135	321	637	59	1	161	99	28	366	714
May ...	42	...	44	68	81	312	547	51	1	149	91	116	426	834
June ...	28	...	38	62	126	252	506	44	...	156	108	92	407	807
July ...	13	...	46	47	114	286	511	21	1	193	91	94	399	799
August ...	26	...	46	51	74	295	492	26	...	205	118	111	448	908
September ...	15	...	88	43	117	270	483	20	1	217	88	128	454	908
October ...	9	...	53	40	115	219	436	13	...	228	79	128	375	813
November ...	9	...	53	46	138	230	476	18	1	211	72	137	439	873
December ...	36	...	61	43	160	338	638	21	...	232	148	249	485	1,135
Total ...	243	...	764	831	1,377	3,753	6,968	475	5	1,896	1,032	1,965	4,775	10,148
	1859.							1860.						
January ...	38	1	234	138	349	499	1,259	7	1	249	149	3	459	868
February ...	100	...	204	116	463	442	1,325	21	2	197	146	2	374	742
March ...	117	...	230	111	130	423	1,011	30	...	218	181	2	374	800
April ...	77	...	174	79	72	363	765	25	...	164	124	6	455	774
May ...	61	1	184	93	20	405	764	35	4	182	151	22	558	952
June ...	22	...	187	112	10	410	741	30	...	173	144	87	534	968
July ...	14	...	203	107	12	420	755	12	2	193	156	1,218	591	2,172
August ...	16	...	188	124	7	432	767	20	1	208	229	637	533	1,628
September ...	10	...	195	119	6	419	750	22	1	196	238	276	508	1,241
October ...	6	...	187	106	3	397	699	18	...	220	272	160	521	1,156
November ...	7	...	172	75	2	403	659	9	...	243	274	91	511	1,128
December ...	5	...	220	117	8	417	797	21	1	226	274	76	446	1,044
Total ...	478	2	2,378	1,297	1,082	5,060	10,292	245	12	2,459	2,338	2,580	5,864	13,498
	1861.							1862.						
January ...	42	3	191	191	35	513	975	107	1	173	176	425	441	1,323
February ...	66	9	157	145	75	456	908	176	4	164	160	485	362	1,351
March ...	96	4	160	147	54	485	946	263	9	184	168	229	441	1,294
April ...	82	10	170	187	150	441	1,040	199	6	160	160	102	439	1,066
May ...	46	3	190	191	204	440	1,074	133	...	174	168	189	433	1,097
June ...	35	...	172	181	76	389	853	65	2	191	148	267	429	1,097
July ...	42	...	171	223	183	414	1,033	41	...	202	191	126	542	1,102
August ...	51	...	180	216	599	438	1,484	22	3	208	216	222	541	1,212
September ...	69	...	193	240	786	457	1,745	12	1	215	221	242	485	1,176
October ...	38	...	230	219	346	463	1,296	9	1	198	218	501	461	1,388
November ...	44	...	178	207	107	448	984	5	...	178	184	519	482	1,368
December ...	44	2	177	188	161	461	1,033	1	...	198	198	328	542	1,257
Total ...	655	31	2,169	2,334	2,776	5,405	13,370	1,033	27	2,235	2,203	3,685	5,598	14,781
	1863.							1864.						
January ...	6	...	192	248	372	353	1,171	19	2	194	209	133	546	1,103
February ...	14	5	159	169	452	413	1,212	42	...	211	179	110	499	1,041
March ...	13	1	173	186	455	501	1,329	47	2	206	178	106	442	981
April ...	17	...	184	200	154	503	1,058	26	2	167	168	45	461	869
May ...	18	1	191	194	84	525	1,018	21	2	152	178	3	438	794
June ...	9	1	185	137	19	527	878	12	...	162	181	4	450	759
July ...	2	...	175	146	5	464	792	...	1	172	169	4	451	797
August ...	5	...	156	159	8	496	824	...	...	159	146	97	460	862
September ...	9	...	190	179	2	472	852	3	...	167	169	38	414	791
October ...	3	1	162	170	46	473	855	1	...	172	175	15	486	849
November ...	6	1	164	187	10	568	936	2	...	168	151	9	436	761
December ...	10	...	183	179	77	486	938	...	...	158	148	10	491	802
Total ...	112	10	2,117	2,154	1,634	5,731	11,858	178	9	2,088	1,996	574	5,574	10,409

Comparative Statement for the year 1855-70, *showing the mortality of each month of the year.*

	1865.							1866.						
	Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.	Small-Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Other Diseases.	Total.
January ...	2	...	156	150	121	475	904	9	1	185	207	99	531	1,032
February ...	1	...	127	177	72	426	803	6	...	165	201	73	444	889
March ...	3	...	161	191	54	478	887	13	...	192	196	149	489	1,039
April ...	5	...	176	140	20	440	781	14	1	166	168	83	465	897
May ...	5	...	191	167	10	412	785	14	...	212	188	77	553	1,044
June ...	2	...	176	149	4	422	753	6	...	174	156	160	489	985
July ...	6	...	180	154	33	489	862	9	...	167	133	577	503	1,389
August ...	4	...	181	195	302	553	1,235	15	...	162	135	544	480	1,336
September ...	4	...	218	237	120	510	1,089	5	...	171	188	534	545	1,443
October ...	6	...	213	255	118	569	1,161	4	...	220	233	283	600	1,340
November ...	3	...	201	198	45	496	943	3	...	223	200	93	590	1,109
December ...	3	...	210	208	45	547	1,013	5	...	219	260	312	582	1,378
Total...	44	...	2,190	2,221	944	5,817	11,216	103	2	2,256	2,265	2,984	6,271	13,881
	1867.							1868.						
January ...	16	1	244	280	364	574	1,479	87	11	191	187	7	541	1,024
February ...	12	2	222	241	178	481	1,136	101	15	158	165	2	536	977
March ...	70	2	231	240	58	499	1,100	184	24	175	177	2	579	1,141
April ...	123	...	196	168	1	487	975	183	24	154	101	...	516	978
May ...	78	...	191	161	1	565	996	115	1	187	117	...	615	1,035
June ...	47	...	206	163	...	537	954	63	3	188	157	...	588	999
July ...	68	...	197	143	...	523	925	26	2	265	215	...	675	1,183
August ...	49	...	207	170	1	505	932	21	2	278	246	...	724	1,271
September ...	46	2	201	195	...	472	916	7	2	188	155	...	609	961
October ...	27	6	186	171	1	533	924	3	...	148	109	...	555	815
November ...	42	13	169	154	...	510	891	5	1	123	98	2	654	883
December ...	50	15	206	178	10	561	1,020	4	...	177	104	...	650	935
Total...	623	42	2,456	2,264	614	6,246	12,245	799	85	2,232	1,881	13	7,242	12,202
	1869.							1870.						
January ...	2	...	175	110	...	614	901	...	1	225	185	37	608	1,001
February ...	...	2	141	91	...	529	763	...	1	191	131	15	548	886
March ...	14	1	160	98	...	529	802	2	1	192	117	9	523	844
April ...	9	1	150	85	2	468	715	1	3	161	103	48	503	819
May ...	4	...	155	119	5	560	843	2	...	175	99	77	525	878
June ...	3	...	177	111	8	575	874	...	...	162	120	392	490	1,164
July ...	1	...	185	151	80	598	1,015	...	...	146	139	113	564	962
August ...	2	...	160	174	226	638	1,200	...	...	194	162	121	609	1,086
September ...	1	...	179	163	147	612	1,102	5	...	191	189	20	614	1,019
October ...	...	...	198	174	73	685	1,130	2	1	245	106	22	658	1,034
November ...	1	...	172	133	16	658	980	4	3	217	161	3	712	1,100
December ...	1	...	163	147	11	615	937	2	2	197	127	4	760	1,092
Total...	33	4	2,015	1,556	568	7,081	11,262	16	12	2,296	1,589	861	7,109	11,885

	Total of 16 years.							
	Small Pox.	Measles.	Fevers.	Bowel Complaint.	Cholera.	Special Diseases.	Other Diseases.	Total.
January	579	22	2,866	2,695	2,854	9,016	7,680	16,696
February	847	40	2,556	2,262	2,381	8 586	6,881	15,467
March	1,214	44	2,710	2,459	1,852	8,279	7,271	15,550
April	1,079	48	2,470	2,046	1,008	6,651	6,812	13,463
May	772	13	2,657	2,181	1,050	6,678	7,491	14,164
June	459	7	2,663	2,086	1,276	6,491	7,247	13,738
July	330	6	2,769	2,265	2,577	7,947	7,659	15,606
August	338	6	2,782	2,547	2,996	8,669	7,944	16,618
September	289	7	2,818	2,684	2,807	8,550	7,561	16,111
October	190	9	2,879	2,555	2,172	7,805	7,705	15,510
November	220	19	2,744	2,354	1,380	6,717	7,858	14,570
December	358	20	2,876	2,538	1,565	7,357	8,180	15,537
Total...	6,675	241	32,785	28,622	24,418	92,741	90,284	1,83,025

TABLE XVII.

Comparative Statement of special and other diseases in Madras for the years 1861-70, arranged according to ages at Death.

—		All ages.	Total under 1 year.	1	2	3	4	Total under 5 years.	5	10	15	25	35	45	55	65	75	85	95 and upwards.
Small Pox.	1861	655	66	57	107	85	76	391	135	75	28	15	4	6	......	......	1	......	....
	1862	1,033	195	107	181	146	78	707	177	74	30	23	15	6	1	......	......	......	....
	1863	112	17	11	27	16	9	80	21	3	5	1	1	1	......	......	......	......	....
	1864	173	20	15	36	32	20	123	27	3	10	3	2	2	2	......	1	......	....
	1865	44	8	5	9	5	2	29	8	1	4	2	......	......	......	......	......	......	....
	1866	103	12	14	14	11	13	64	8	18	3	5	2	1	......	2	......	......	....
	1867	623	79	75	123	84	56	417	65	87	16	23	13	2	......	......	......	......	....
	1868	799	147	176	128	106	63	620	95	27	18	17	17	3	1	1	......	......	....
	1869	38	11	5	7	4	2	29	3	2	1	2	1	......	......	......	......	......	....
	1870	18	2	1	5	......	2	10	3	3	1	1	......	......	......	......	......	......	....
	Total...	3,598	557	466	637	489	321	2,470	542	293	116	92	55	21	4	3	2	......	....
Measles.	1861	31	7	5	3	4	3	22	4	1	2	......	1	1	......	......	......	......	....
	1862	27	3	1	1	4	1	10	4	3	3	1	4	1	1	......	......	......	....
	1863	10	4	1	1	......	1	7	3	......	......	......	......	......	......	......	......	......	....
	1864	9	1	2	1	......	1	5	1	......	1	......	2	......	......	......	......	......	....
	1865	....	....	...	....	......	......	....	......	......	......	......	......	......	......	......	......	......	....
	1866	2	....	1	....	......	......	1	......	......	1	......	......	......	......	......	......	......	....
	1867	42	7	4	4	7	4	26	1	5	3	3	2	......	......	2	......	......	....
	1868	85	14	16	14	16	6	66	11	3	......	1	3	......	......	1	......	......	....
	1869	4	1	1	1	......	......	3	......	......	......	1	......	......	......	......	......	......	....
	1870	12	2	3	2	2	1	10	......	2	......	......	......	......	......	......	......	......	....
	Total...	222	39	34	27	33	17	150	24	14	10	6	12	2	1	3	......	......	....
Fevers.	1861	2,169	203	107	164	111	89	668	183	177	226	203	176	158	146	126	82	23	2
	1862	2,235	188	81	103	99	71	542	207	200	197	243	209	197	161	105	62	22	....
	1863	2,117	214	122	137	89	117	679	196	167	203	186	181	155	184	85	64	17	....
	1864	2,088	107	106	164	96	136	609	268	162	156	198	186	152	166	118	52	21	....
	1865	2,190	83	157	140	143	120	643	188	248	184	210	166	148	176	118	69	36	4
	1866	2,256	48	109	137	135	109	538	89	414	252	197	173	188	166	155	63	18	4
	1867	2,456	28	62	169	150	118	527	109	504	249	233	202	255	167	140	54	15	1
	1868	2,232	125	207	208	130	103	778	225	134	180	230	188	145	143	133	52	24	1
	1869	2,015	113	218	140	103	64	688	190	117	124	203	176	172	131	157	69	28	11
	1870	2,296	89	161	244	114	88	691	59	298	107	270	223	227	138	157	83	38	10
	Total...	22,049	1,197	1,325	1,606	1,170	1,015	6,318	1,803	2,416	1,878	2,172	1,879	1,797	1,578	1,288	650	242	33

TABLE XVII.—(*Continued.*)

Comparative Statement of special and other diseases in Madras for the years 1861-70, *arranged according to ages at Death.*

	—	All ages.	Total under 1 year.	1	2	3	4	Total under 5 years.	5	10	15	25	35	45	55	65	75	85	95 and upwards.
Special Diseases.	1861	7,965	593	297	462	383	305	2,040	721	628	79:	997	777	622	569	434	295	85	6
	1862	9,188	646	3:9	493	438	321	2,217	979	793	893	1,164	922	788	703	376	220	77	1
	1863	6,077	519	270	343	243	217	1,592	526	418	597	689	622	512	578	276	195	72	......
	1864	4,835	349	268	322	218	237	1,389	502	306	379	497	415	407	450	288	154	48	......
	1865	5,399	344	388	290	275	214	1,511	374	446	408	564	468	429	448	391	259	87	14
	1866	7,610	164	374	347	356	272	1,513	261	968	588	935	855	702	627	694	328	117	22
	1867	5,9·9	161	244	459	363	248	1,475	257	777	360	505	504	585	560	548	339	77	12
	1868	4,960	463	625	475	341	246	2,150	431	188	253	366	333	290	349	341	189	65	5
	1869	4,181	271	419	271	224	127	1,312	334	225	212	412	379	322	284	388	199	98	21
	1870	4,776	192	332	418	215	169	1,356	139	499	210	561	451	419	366	399	228	122	26
	Total...	60,935	3,702	3,536	3,880	3,081	2,356	16,555	4,524	5,248	4,691	6,690	5,726	5,076	4,934	4,185	2,406	848	107
Other Diseases.	1861	5,405	1,640	58	71	42	28	1,889	43	86	379	706	603	436	435	373	254	211	40
	1862	5,598	1,737	28	69	39	28	1,901	88	92	418	617	631	450	548	385	267	199	7
	1863	5,781	1,912	61	80	47	47	2,147	87	100	392	546	520	461	535	418	360	215	......
	1864	5,574	1,801	45	89	35	42	2,012	76	79	392	544	484	431	591	414	356	194	1
	1865	5,817	1,856	61	65	27	24	2,033	50	79	265	582	588	489	432	415	421	350	113
	1866	6,271	2,252	94	75	41	23	2,185	26	69	126	519	554	426	381	508	539	498	145
	1867	6,246	2,209	40	107	40	22	2,418	12	54	70	430	431	473	457	578	644	550	134
	1868	7,242	3,172	150	76	62	39	3,499	75	69	248	529	482	422	478	504	487	345	104
	1869	7,081	3,121	109	73	29	25	3,457	47	63	168	533	498	440	377	480	506	413	204
	1870	7,109	2,858	91	94	32	30	3,105	27	95	103	548	616	454	327	489	599	487	259
	Total...	62,124	22,558	737	799	394	308	24,796	531	786	2,556	5,554	5,402	4,482	4,561	4,554	4,433	3,462	1,007
All Diseases.	1861	13,370	2,233	355	533	425	333	3,879	764	714	1,170	1,703	1,380	1,058	1,004	807	549	296	46
	1862	14,731	2,383	347	562	477	349	4,118	1,067	885	1,306	1,781	1,553	1,238	1,251	761	487	276	8
	1863	11,858	2,431	331	423	290	264	3,739	613	518	989	1,235	1,142	973	1,113	694	555	287	......
	1864	10,409	2,150	313	411	248	279	3,401	578	385	771	1,041	899	838	1,041	702	510	242	1
	1865	11,216	2,200	419	355	302	238	3,544	424	525	678	1,146	1,056	918	880	806	680	437	127
	1866	13,881	2,416	468	422	397	295	3,998	287	1,037	714	1,454	1,409	1,128	1,008	1,197	867	615	167
	1867	12,245	2,370	284	566	403	270	3,893	269	831	430	935	935	1,058	1,017	1,121	983	627	146
	1868	12,202	3,635	775	551	403	285	5,649	506	257	501	895	815	712	827	845	676	410	109
	1869	11,262	3,392	528	844	258	153	4,769	381	288	380	945	872	762	661	868	705	506	225
	1870	11,885	3,050	423	512	277	199	4,461	166	594	313	1,109	1,067	878	698	888	827	609	285
	Total...	1,23,059	26,260	4,278	4,679	3,475	2,664	41,351	5,055	6,034	7,247	12,244	11,128	9,558	9,495	8,689	6,839	4,305	1,114

TABLE XVII.—(*Continued.*)

Comparative Statement of special and other diseases in Madras for the years arranged 1861-70, according to ages at Death.

—		All ages.	Total under 1 year.	1	2	3	4	Total under 5 years.	5	10	15	25	35	45	55	65	75	85	95 and upwards.
Bowel Complaint.	1861	2,384	310	121	188	31	57	702	108	106	105	218	250	206	238	194	158	52	2
	1862	2,208	250	109	122	79	53	613	140	100	102	214	225	241	274	155	95	48	1
	1863	2,154	279	115	138	93	54	674	137	80	111	173	206	203	283	135	106	46	...
	1864	1,996	219	140	105	71	60	595	182	83	101	196	168	208	234	159	94	26	...
	1865	2,221	249	215	112	78	65	719	95	89	119	185	178	185	213	223	162	44	9
	1866	2,265	96	218	114	87	49	564	46	147	70	168	200	218	233	340	191	73	15
	1867	2,264	46	98	154	95	55	448	50	116	50	184	188	259	337	348	268	56	10
	1868	1,831	177	226	125	89	69	686	99	28	54	114	122	140	204	207	137	41	4
	1869	1,556	143	189	106	86	37	561	77	46	36	119	132	96	111	193	115	60	10
	1870	1,589	87	148	130	86	43	494	34	98	30	122	127	110	168	198	123	74	16
	Total ...	20,413	1,856	1,579	1,234	845	542	6,056	913	888	778	1,643	1,796	1,866	2,295	2,147	1,449	515	67
Cholera.	1861	2,776	8	12	55	102	80	257	397	269	430	561	346	251	185	114	54	10	2
	1862	3,635	10	21	86	110	118	345	361	416	561	683	469	343	266	116	63	12	...
	1863	1,684	5	21	45	45	36	152	169	168	278	329	234	153	111	56	25	9	...
	1864	574	2	5	16	14	20	57	74	58	111	100	57	45	48	16	7	1	...
	1865	944	4	11	29	49	27	120	83	108	101	167	124	96	59	50	28	7	1
	1866	2,984	8	32	82	123	101	346	118	389	262	565	481	295	228	197	74	26	3
	1867	614	1	5	9	27	15	57	32	65	42	112	99	69	56	58	17	6	1
	1868	13	...	...	...	...	...	...	1	1	1	4	3	2	1	...	...	...	...
	1869	568	3	6	17	31	24	81	64	60	51	88	70	54	42	38	15	5	...
	1870	861	12	19	37	43	40	151	43	108	72	168	101	82	60	49	22	10	...
	Total...	14,653	53	132	376	544	461	1,566	1,242	1,637	1,909	2,777	1,984	1,390	1,056	694	305	86	7

TABLE XVII.—(*Continued.*)

Comparative Statement of special and other diseases in Madras for the years 1861-70, arranged according to ages at Death.

—		All ages.	Total under 1 year.	1	2	3	4	Total under 5 years.	5	10	15	25	35	45	55	65	75	85	95 and upwards.
Special Diseases.	1861	7,965	593	297	462	383	305	2,040	721	628	792	997	777	622	569	434	295	85	6
	1862	9,138	646	319	493	438	321	2,217	979	793	893	1,164	922	788	703	376	220	77	1
	1863	6,077	519	270	348	243	217	1,592	526	418	597	689	622	512	578	276	195	72	......
	1864	4,835	349	268	322	213	237	1,389	502	306	379	497	415	407	450	288	154	48	......
	1865	5,399	344	388	290	275	214	1,511	374	446	408	564	468	429	448	391	259	87	14
	1866	7,610	164	374	347	356	272	1,513	261	968	588	935	855	702	627	694	328	117	22
	1867	5,909	161	244	459	363	248	1,475	257	777	360	505	504	585	560	548	339	77	12
	1868	4,960	463	625	475	341	246	2,150	431	188	253	366	333	290	349	341	189	65	5
	1869	4,181	271	419	271	224	127	1,312	334	225	212	412	379	322	284	388	199	98	21
	1870	4,776	192	332	418	245	169	1,356	139	499	210	561	451	419	366	399	228	122	26
	Total...	60,935	3,702	3,536	3,880	3,081	2,356	16,555	4,524	5,248	4,691	6,690	5,726	5,076	4,934	4,135	2,406	848	107
Other Diseases.	1861	5,405	1,640	58	71	42	28	1,839	43	86	379	706	608	436	435	373	254	211	40
	1862	5,598	1,737	28	69	39	28	1,901	88	92	418	617	631	450	548	385	267	199	7
	1863	5,781	1,912	61	80	47	47	2,147	87	100	392	546	520	461	535	418	360	215	......
	1864	5,574	1,801	45	89	35	42	2,012	76	79	392	544	424	431	591	414	356	194	1
	1865	5,817	1,856	61	65	27	24	2,033	50	79	265	582	588	489	432	415	421	350	113
	1866	6,271	2,252	94	75	41	23	2,485	26	69	126	519	554	426	381	503	539	498	145
	1867	6,246	2,209	40	107	40	22	2,418	12	54	70	430	431	473	457	578	644	550	134
	1868	7,242	3,172	150	76	62	39	3,499	75	69	248	529	482	422	478	504	487	345	104
	1869	7,081	3,121	109	73	29	25	3,357	47	63	168	533	498	440	377	480	506	418	204
	1870	7,109	2,858	91	94	32	30	3,105	27	95	103	548	616	454	327	489	599	487	259
	Total...	62,124	22,558	737	799	394	308	24,796	531	786	2,556	5,554	5,403	4,482	4,561	4,554	4,433	3,463	1,007
All Diseases.	1861	13,370	2,233	355	533	425	333	3,870	764	714	1,170	1,703	1,380	1,058	1,004	807	549	296	46
	1862	14,731	2,383	347	562	477	349	4,118	1,067	885	1,306	1,781	1,553	1,238	1,251	761	487	276	8
	1863	11,858	2,431	331	428	290	264	3,739	613	518	989	1,235	1,142	973	1,113	694	555	287	......
	1864	10,409	2,150	313	411	248	279	3,401	578	385	771	1,041	899	838	1,041	702	510	242	1
	1865	11,216	2,200	419	355	302	238	3,544	424	525	673	1,146	1,056	918	880	806	680	437	127
	1866	13,881	2,416	468	422	397	295	3,998	287	1,037	714	1,454	1,409	1,128	1,008	1,197	867	615	167
	1867	12,245	2,370	284	566	403	270	3,893	269	831	430	935	935	1,058	1,017	1,121	983	627	146
	1868	12,202	3,635	775	551	403	285	5,649	506	257	501	895	815	712	827	845	676	410	109
	1869	11,262	3,392	528	344	253	152	4,669	381	288	380	945	872	762	661	868	705	506	225
	1870	11,885	3,050	423	512	277	199	4,461	166	594	313	1,109	1,067	873	693	888	827	609	285
	Total...	1,23,059	26,260	4,273	4,679	3,475	2,664	41,351	5,055	6,034	7,247	12,244	11,128	9,558	9,495	8,689	6,839	4,305	1,114

TABLE XVII.—(*Continued.*)

Comparative Statement of special and other diseases in Madras for the years arranged 1861-70, *according to ages at Death.*

—		All ages.	Total under 1 year.	1	2	3	4	Total under 5 years.	5	10	15	25	35	45	55	65	75	85	95 and upwards.
Bowel Complaint.	1861	2,334	310	121	133	81	57	702	103	106	105	218	250	206	238	194	158	52	2
	1862	2,208	250	109	122	79	53	613	140	100	102	214	225	241	274	155	95	48	1
	1863	2,154	279	115	133	93	54	674	137	80	111	173	206	203	283	135	106	46	...
	1864	1,996	219	140	105	71	60	595	132	83	101	196	168	208	234	159	94	26	...
	1865	2,221	249	215	112	78	65	719	95	89	119	185	178	185	218	223	162	44	9
	1866	2,265	96	218	114	87	49	564	46	147	70	168	200	218	233	340	191	73	15
	1867	2,264	46	98	154	95	55	448	50	116	50	134	188	259	337	348	268	56	10
	1868	1,831	177	226	125	89	69	686	99	23	54	114	122	140	204	207	137	41	4
	1869	1,556	143	189	106	86	37	561	77	46	36	119	132	96	111	193	115	60	10
	1870	1,589	87	148	130	86	43	494	34	98	30	122	127	110	168	193	123	74	16
	Total ...	20,413	1,856	1,579	1,334	845	542	6,056	913	888	778	1,643	1,796	1,866	2,295	2,147	1,449	515	67
Cholera.	1861	2,776	8	12	55	102	80	257	397	269	430	561	346	251	185	114	54	10	2
	1862	3,635	10	21	86	110	118	345	361	416	561	683	469	343	266	116	63	12	...
	1863	1,684	5	21	45	45	36	152	169	168	278	329	234	153	111	56	25	9	...
	1864	574	2	5	16	14	20	57	74	58	111	100	57	45	48	16	7	1	...
	1865	944	4	11	29	49	27	120	83	108	101	167	124	96	59	50	28	7	1
	1866	2,984	8	32	82	123	101	346	118	389	262	565	481	295	228	197	74	26	3
	1867	614	1	5	9	27	15	57	82	65	42	112	99	69	56	58	17	6	1
	1868	13	...	...	...	...	...	...	1	1	1	4	3	2	1	...	...	...	...
	1869	568	3	6	17	31	24	81	64	60	51	88	70	54	42	38	15	5	...
	1870	861	12	19	37	48	40	151	43	108	72	168	101	82	60	49	22	10	...
	Total...	14,653	53	132	376	544	461	1,566	1,242	1,637	1,909	2,777	1,984	1,390	1,056	694	305	86	7

TABLE XVIII.

MARRIAGES FOR THE YEAR 1845.

Husband's Age.

Wife's Age.	Under 18.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	Over 55	Total.
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
13	...	...	...	...	...	...	1	2	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
14	...	...	2	1	4	4	2	3	2	6	...	2	1	2	...	1	1	1	1	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	36
15	...	...	1	1	7	4	2	4	8	2	3	2	...	1	1	2	1	...	1	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	43
16	...	...	...	3	2	5	3	3	7	2	3	2	2	2	1	1	2	1	...	2	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	44
17	...	...	...	1	4	2	6	2	...	2	1	...	...	5	...	...	1	2	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29
18	...	...	...	...	1	1	4	4	5	3	...	1	2	3	1	3	...	1	1	1	...	1	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	35
19	...	...	...	...	...	1	1	2	1	4	2	1	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
20	...	...	...	...	...	1	...	1	3	...	1	3	...	3	...	2	...	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17
21	...	...	...	...	2	1	5	1	...	1	...	1	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
22	...	...	...	...	1	3	1	1	2	...	2	1	1	1	...	...	1	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	17
23	...	...	...	...	1	...	...	1	2	...	3	1	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
24	...	...	...	1	...	...	1	...	...	...	...	...	1	1	...	...	...	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	8
25	...	...	...	...	...	...	1	...	1	2	1	1	2	2	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	16
26	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	6
27	...	...	...	...	1	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	6
28	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	4
29	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	4
30	...	...	...	...	...	1	...	...	...	1	1	...	2	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	8
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2
36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Over 45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Total.	...	...	3	7	23	23	27	24	33	26	20	15	14	22	7	12	7	9	7	11	4	2	3	6	3	5	1	3	4	2	...	...	1	1	1	...	1	1	...	4	332

TABLE XVIII.—(*Continued.*)

MARRIAGES FOR THE YEAR 1845.

HUSBAND'S AGE.

Wife's Age.	Under 18.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	Over 55.	Total.
12	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
13	...	...	...	...	2	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
14	...	2	...	2	3	2	2	4	2	1	1	...	2	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
15	...	...	1	2	4	2	4	1	4	1	2	3	3	...	...	...	...	2	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	32
16	...	...	1	2	3	4	3	1	8	2	...	2	2	2	1	...	1	3	...	1	...	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	39
17	...	...	1	5	1	2	7	2	5	1	5	1	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	33
18	...	...	1	2	...	3	4	6	3	5	2	1	...	1	1	1	2	2	1	...	...	3	1	1	...	...	...	...		...	...	...	...	2	...	...	...	...	...	...	42
19	...	...	...	...	2	3	2	1	3	1	...	2	2	1	1	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	21
20	1	...	...	...	1	4	2	1	2	3	1	...	1	2	...	1	1	...	2	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	25
21	...	...	...	1	1	...	...	1	1	...	3	1	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	12
22	...	...	...	...	2	...	1	...	1	3	...	1	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	13
23	...	...	...	...	...	...	...	1	1	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	7
24	...	...	...	1	...	...	...	...	1	...	...	1	...	1	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
25	...	...	...	...	...	...	...	...	...	...	2	1	1	2	2	...	...	...	1	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	12
26	...	...	...	...	...	...	...	...	3	...	...	3	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	9
27	...	...	...	...	...	...	...	1	...	...	1	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	6
28	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	5
29	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	5
32	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	5
33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
36	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2
40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	2
41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	3
Over 45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total.	1	2	4	15	19	23	27	20	34	19	18	17	16	11	7	12	8	8	6	5	5	7	6	2	2	5	3	1	4	1	1	2	2	5	...	...	1	2	1	4	326

TABLE XVIII.—(*Continued.*)

MARRIAGES FOR THE YEAR 1865.

HUSBAND'S AGE.

Wife's Age.	Under 18.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	Over 55.	Total.
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
14	...	...	...	...	...	1	...	1	1	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
15	...	...	...	1	1	2	4	5	7	...	1	2	...	1	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	27
16	...	...	1	4	3	6	4	2	6	2	1	4	1	...	1	...	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	38
17	...	...	...	2	4	...	2	4	4	4	1	2	1	...	...	...	1	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	28
18	...	...	...	2	3	4	4	2	4	...	...	2	...	1	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	26
19	...	...	1	...	5	...	1	5	4	2	...	...	2	...	1	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
20	...	...	...	...	...	...	1	2	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
21	...	...	...	1	1	1	1	...	2	...	...	...	...	1	...	2	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	13
22	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
23	...	...	...	...	...	1	...	1	...	...	2	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
24	...	...	...	...	...	...	3	1	...	1	...	...	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
25	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
26	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
27	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
28	...	...	...	...	1	...	1	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
29	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
30	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	3
32	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	2
36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
37	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Over 45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Total.	...	...	3	10	19	16	21	25	32	15	9	13	6	8	4	8	6	4	1	2	1	...	2	6	2	3	3	2	...	...	...	4	...	1	...	...	...	...	...	3	229

TABLE XIX.

Comparative Statement of Special and other Diseases for thirteen years, from 1859 to 1871-72, arranged according to Divisions.

Municipal Divisions.	1st.	2nd.	3rd.	4th.	5th.	6th.	7th.	8th.	Total.	
Population.	65,547	75,326	50,957	9,791	65,491	19,390	69,568	41,482	3,97,552	
	Tondiarpettah, Washerman's Pettah, Monegar Choultry, Royapooram, and Cash-mode.	Peddoo Naick's Pettah, Big Parcherry, John Pereira's Garden, & Fort St. George.	Moottealpettah and Uttapauliam.	Gun Powder Mills, Perambore, and Viasarpandy.	Choolay, Pursewalkum, Pareamettoo, New Town, Vepery, Poodoopettah, Egmore, and Comaleeswarpooram.	Kilpaukum, Chetput, Nungumbaukum, and Mackay's Garden.	Poodoopaukum, Chintadripettah, Narasingapooram, Triplicane, and Therooveteeswaranpettah.	St. Thomé, Alwarpettah, Royapettah, Meer Saib's Pettah, Kistnampettah, and Thanampettah.	Total average of 13 years.	Ratio per mille.
Small-pox	35·2	108·4	41·1	4·8	43·8	10·2	64·8	50·1	358·4	0·9
Measles	2·5	5·0	2·8	0·4	3·5	0·2	6·0	5·4	25·7	0·06
Fevers	234·1	713·2	219·2	28·7	357·7	80·7	376·3	241·3	2,251·2	5·6
Dysentery...	136·5	204·2	78·5	25·5	225·2	102·6	233·2	130 7	1,136·5	2·8
Diarrhœa	113·8	267·8	70·1	10·6	109·6	66·7	150·4	79·4	868·4	2·1
Cholera	208·1	374·4	97·2	30·8	254·4	33·0	303·2	142·8	1,443·8	3·6
Other diseases	712·6	1,467·9	518·5	114·1	999·4	326·7	1,361·4	728·2	6,228·8	15·6
Total ...	1,442·9	3141·0	1,027·3	214·9	1,993·6	620·0	2,495·2	1,377·8	12,312·7	30·9
Ratio per mille ...	22·0	41·6	20·1	21·9	30·4	31·9	35·8	33·2	30·9	......

TABLE XX.

Return exhibiting the number and result of Vaccine operations in the Town of Madras during the Months of April, May, June, July, August, and September 1871.

Month.		Under 1 Year.										Above 1 Year.									
		European and East Indian.		Natives.				General Total.		Result of operation.		European and East Indian.		Natives.				General Total.		Result of operation.	
				Hindoo.		Mahomedan.								Hindoo.		Mahomedan.					
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Successful.	Unsuccessful.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Successful.	Unsuccessful.
April ...	Vaccine Depôt	1	...	16	14	...	...	17	14	31	...	3	1	33	48	4	...	40	49	84	5
	Madras Collectorate	5	2	28	15	2	1	35	18	52	1	19	49	177	123	32	27	228	199	408	19
May ...	Vaccine Depôt	...	...	19	18	1	...	20	18	38	...	...	...	30	101	2	1	32	102	127	7
	Madras Collectorate	2	1	22	14	10	2	34	17	51	...	4	2	155	145	33	24	192	171	352	11
June ...	Vaccine Depôt	...	...	11	9	...	...	11	9	20	...	4	1	31	75	...	1	35	77	103	9
	Madras Collectorate	5	...	19	19	1	1	25	20	45	...	18	2	152	124	39	19	209	145	341	13
July ...	Vaccine Depôt	...	...	17	11	...	...	17	11	28	...	3	...	76	131	...	...	79	131	200	10
	Madras Collectorate	...	1	13	12	3	3	16	16	31	1	32	7	221	137	24	15	277	159	431	15
August.	Vaccine Depôt	...	...	19	13	...	...	19	13	32	...	...	...	33	94	...	...	33	94	121	6
	Madras Collectorate	4	2	15	13	3	4	22	19	40	1	27	15	277	188	33	23	337	226	523	40
Sept. ...	Vaccine Depôt	...	2	23	13	...	...	23	15	38	...	...	2	44	76	1	...	45	78	114	9
	Madras Collectorate	2	6	16	24	...	...	18	30	48	...	23	33	182	174	35	18	240	225	139	36
	Total ...	19	14	218	175	20	11	257	209	454	3	133	112	1,411	1,416	203	128	1,747	1,655	3,233	170

Office of Supt.-Genl. of Vaccination, Madras Presidency,
Madras, 10*th October* 1871.

JOHN SHORTT, M.D., *Surgeon,*
Supt.-Genl. of Vaccination, M. P.

TABLE XXI.

Deaths from Dysentery and Diarrhœa in each Village of Madras from the year 1859 *to* 1872.

Divisions.	VILLAGES.	1859.		1860.		1861.		1862.		1863.		1864.		1865.		1866.		1867.		1868.		1869.		1870.		1871-72.		Total.		Average.	
		Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.	Dysentery.	Diarrhœa.
1	Tondiarpettah ...	22	3	11	3	17	3	4	2	7	...	4	...	1	2	4	1	13	1	9	1	30	11	28	6	27	7	177	40	18·6	3·1
	Washerman's Pettah...	41	5	62	33	38	20	35	10	49	11	39	12	74	36	100	42	112	89	57	31	37	82	54	88	108	52	806	361	62·0	27·8
	Monegar Choultry ...	8	45	6	33	11	50	7	87	12	85	13	69	12	76	15	90	21	79	3	48	16	40	18	45	20	33	158	780	11·8	60·0
	Royapooram ...	31	4	50	33	28	17	50	10	35	8	19	10	24	6	25	10	17	13	26	16	32	14	84	13	44	17	415	171	31·9	13·1
	Cashmode ...	24	12	23	23	8	9	20	28	26	1	21	15	14	4	20	4	47	18	23	6	17	9	15	9	34	11	292	149	22·5	11·5
2	Peddoo Naick's Pettah.	162	75	234	312	256	328	268	322	289	296	212	305	242	337	200	259	238	206	101	218	82	135	74	179	97	375	2,455	3,347	188·8	257·5
	Big Parcherry ...	3	...	1	...	6	5	20	8	23	13	23	13	24	19	31	24	34	18	3	13	4	14	3	9	5	1	180	187	13·8	10·5
	John Pereira's Garden.	4	5	1	1	3	7	7	5	3	6	2	1	2	3	1	5	3	1	...	3	...	...	2	1	...	2	28	40	2·1	3·1
3	Fort St. George ...	...	1	...	...	1	1	1	5	1	2	...	3	...	1	5	1	2	...	...	...	1	2	...	...	...	...	11	16	0·8	1·2
	Moottealpettah ...	68	10	83	58	105	72	66	38	89	42	88	72	70	89	8	93	94	69	57	60	33	42	46	53	104	91	992	789	76·3	60·7
	Uttapauliam ...	...	1	...	...	2	1	...	...	...	...	...	...	...	1	18	11	22	17	6	8	...	...	...	3	1	2	49	44	3·8	3·4
4	Gun Powder Mills ...	1	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	5	...	0·4	...
	Perambore ...	14	...	8	1	15	1	13	2	13	5	12	3	14	3	14	3	15	1	17	18	32	14	32	22	39	25	238	99	18·3	7·6
	Viasarapaudy ...	18	2	4	3	14	...	3	...	4	1	5	...	5	...	5	1	3	2	9	7	1	5	4	7	24	17	99	44	7·6	3·4
5	Choolay ...	62	10	70	19	43	12	40	14	36	5	27	8	28	7	43	8	43	4	55	18	47	37	44	23	24	88	562	202	43·2	15.5
	Pursewaukum ...	66	15	69	35	69	19	62	24	85	19	104	26	85	31	105	34	121	11	86	50	123	60	121	78	124	103	1,220	500	93·8	38·5
	Pareamettoo ...	53	16	39	24	25	7	14	5	18	4	24	2	30	8	27	8	33	5	26	15	24	4	22	18	20	15	355	181	27·3	10·1
	New Town ...	1	6	2	2	7	4	4	7	8	7	5	1	8	7	6	2	7	5	6	3	6	8	6	3	16	7	82	62	6·3	4·8
	Vepery ...	11	3	10	6	15	11	8	6	11	5	8	4	13	6	21	9	13	2	14	12	15	15	14	7	20	12	178	98	13·3	7·5
	Poodoopettah ...	9	2	15	11	5	11	9	10	11	12	11	4	12	11	13	10	14	12	30	20	17	13	11	4	22	16	179	136	13·8	10·5
	Egmore ...	15	8	32	8	13	7	10	11	10	2	15	6	19	5	18	4	10	1	19	9	23	10	20	16	15	25	219	112	16·8	8·6
	Comaleeswarpooram...	23	4	16	40	16	43	21	38	13	17	15	14	16	12	15	11	12	7	11	11	11	4	8	5	18	9	195	215	15·0	16·5
6	Kilpaukum ...	8	3	5	3	9	2	9	2	6	2	11	1	13	2	4	1	5	1	5	...	8	8	12	7	9	6	104	38	8·0	2·9
	Chetput ...	1	2	8	4	5	1	3	9	11	11	20	29	29	56	42	10	21	20	15	8	5	...	8	5	27	12	190	167	14·6	12·8
	Nungumbaukum ...	58	7	119	57	114	26	97	66	64	50	34	52	59	68	84	39	56	55	33	24	20	11	14	11	43	26	795	492	61·1	37·8
	Mackay's Garden ...	2	3	3	...	1	1	4	15	22	19	20	15	31	30	46	11	39	25	22	18	24	11	13	10	41	23	268	180	20·6	13·8
7	Poodoopaukum ...	8	2	2	2	7	3	6	10	24	19	40	41	34	35	47	14	60	51	41	26	18	5	11	8	22	8	320	224	24·6	17·2
	Chintadrepettah ...	68	34	68	113	72	95	100	115	97	92	80	71	122	102	103	84	90	46	70	42	40	43	42	29	52	52	1,004	917	77·2	70·5
	Narasingapooram ...	1	2	1	...	3	2	6	2	1	3	4	1	10	2	10	6	11	5	4	8	4	4	16	7	15	5	86	47	6·6	3·6
	Triplicane ...	35	39	185	6	284	103	153	88	168	65	133	37	72	26	90	57	93	48	123	66	106	54	97	49	98	72	1,637	768	125·9	59·1
	Theroovateeswaranpettah ...	4	...	1	1	...	1	...	...	...	...	...	...	...	...	...	3	...	...	...	...	2	2	4	3	4	3	15	13	1·2	1·0
8	St. Thomé ...	99	27	151	87	122	84	88	56	56	57	63	32	44	34	65	41	97	24	72	28	72	38	49	20	79	28	1,057	556	81·3	42·8
	Alwarpettah ...	4	1	3	2	2	1	1	2	6	3	3	3	1	1	2	...	2	...	6	1	2	...	1	...	2	...	35	14	2·7	1·1
	Royapettah ...	9	6	16	14	14	5	18	13	17	22	17	13	23	13	20	21	27	16	22	10	16	15	22	14	23	8	244	170	18·8	13·1
	Meer Saib's Pettah ...	2	...	8	5	1	3	...	2	5	3	4	6	3	2	7	8	16	6	8	3	8	3	9	10	14	7	85	58	6·5	4·5
	Kistnampettah ...	1	2	6	5	3	9	4	4	1	4	12	2	3	5	18	5	21	10	14	3	...	2	11	2	9	5	98	58	7·5	4·5
	Thanampettah ...	3	3	14	10	17	17	20	16	19	23	14	23	22	22	10	17	17	26	25	8	12	5	14	6	17	7	204	183	15·7	14·7
	Total...	939	358	1,326	1,012	1,353	981	1,171	10,32	1,240	914	1,103	893	1,159	1,062	1,318	947	1,420	844	1,019	812	888	668	874	715	1,217	1,120	15,027	13,518	1155·9	873·7

APPENDIX C.

MEMORANDUM ON SEWAGE FARMS.

The idea of farms for utilizing or rendering innocuous the sewage of Madras dates from the year 1869 when Colonel Denison was President of the Municipal Commission and Mr. Standish Lee the Municipal Engineer. To the latter gentleman belongs the credit of their inception, upon him devolved the great labor of their formation. There are now two farms, one at Choolay known as the D'Mellow's Road Farm, and the other at Kistnampett.

The Choolay Farm was first in point of date. It arose out of the difficulty of disposing of the sewage of the Perambore Regimental lines, and I cannot do better now than quote Mr. Lee's words in 1870 :—

UTILIZATION OF SEWAGE.

"The establishment of Sewage-farm arose out of the consideration of the question as to the "ultimate disposal of the sewage from the Right Wing lines of the Perambore Regiment. After being "under discussion for nearly nine years, during which period several orders were passed by the Govern-"ment, the scheme sent up by the Municipality for conveying the sewage to the swamp now converted "into a farm was sanctioned on the 14th December 1868 ; and the proposal to reclaim and utilize the "sewage on it was passed in Council on the 19th May 1869.

"The Commissioners were put in possession of the land on the 7th June 1869, and the first appli-"cation of sewage took place on the 29th of that month. The "Officiating Sanitary Commissioner, Captain Tulloch, reported to "Government on the 27th September 1869 the progress made "and the results obtained. The raising of the swamp by the "burial of street sweepings has steadily progressed, and the "land thus reclaimed is at once levelled and irrigated with "sewage. The number of carts-load of rubbish thus disposed "of is given in the margin. It amounts to over 11,000 "tons, and the ground reclaimed is about $3\frac{1}{2}$ acres.

	CARTS.
June	101
July	705
August	984
September	3,001
October	6,662
November	5,637
December	6,670
Total	23,150

"The lagoon which had been periodically submerged by salt water had not a blade of grass "growing on it at the time I proposed to establish the farm. The soil when first thrown up to "weather was black, plastic, and as retentive as stiff clay. Nothing could have been worse for the "test it was proposed to put it to. Had I the option of selection, I should have certainly preferred a "light porous, and friable soil. Prejudice against the use of sewage was such that had it not been "that a large quantity of it was discharged for a long time past into this swamp, my proposal to utilize "it would probably never have been sanctioned. Notwithstanding the poor soil, and no manure, sheep-"fold or fertilizer of any kind was used to put the land in condition for the seed, the result establishes "beyond the possibility of a doubt the fertilizing value of sewage.

"The extent of land under cultivation on the 31st December 1869 was about $2\frac{1}{4}$ acres, of this only "one-half has had the benefit of sewage as the quantity available was insufficient for the whole.

"The area treated with sewage is clearly traceable by the state of the crops ; especially the raggy, "the stalks of which stand strong and thick and are over 3 feet high, with ears plentiful and large, "where sewage has been applied, but in the other part irrigated in the usual way, the poor soil has "only produced stunted blades, about 9 inches high with an occasional ear filled with chaff. The "effects of sewage on paddy may be judged by the photograph of a sheaf on the opposite page.

"Works are under progress for taking up two other streams that have for years been discharging "into this swamp, and also for diverting the Choolay main-drain and carrying its sewage into the "farm.

"This experiment presents such important features of social and scientific interest, that I should "have liked to have investigated it in all its bearings. The importance attached to such an inquiry at "the present time, when the systematic drainage of Madras is under consideration will be readily "acknowledged, and I have therefore been the more anxious that the results obtained may be thoroughly "practical, and the conclusions arrived at authoritative.

"To carry out such an inquiry, numerous observations and experiments, aided by chemical "analysis and microscopic examinations, are essential. Major Mitchell, of the Government Museum, "most obligingly promised his assistance in accomplishing the latter ; but owing to the Chemical "Examiner to Government not being able to lend his aid, from press of duty, and it being ascertained "that each analysis would cost Rupees 100 if conducted by other agency, I was compelled to abstain from "undertaking the investigation, as mere examinations under the lens without simultaneous analysis, "would be of very little use.

"Notwithstanding these drawbacks, I am happy to be able to report that the experience gained "during the six months that have elapsed since the opening of the farm, affords every promise of "practical utility.

"The knowledge gained on the use of sewage may be briefly stated thus :—

"*1st.*—That the native idea that sewage is injurious to vegetation is not founded on facts.

"*2nd.*—That some crops take to it more kindly than others. Grasses and cereals thriving best.

"*3rd.*—That the sun is a most powerful deodorizer, and, in this matter, India with its intense heat "has a great advantage over temperate climates.

"*4th.*—That the soil seizes upon the constituents of sewage and prevents the escape of foul gases, "and in this instance also the tropics, with a dry, thirsty soil, are better adapted for sewage irrigation, "than the temperate zones, where the first consideration of the agriculturist is to get rid of the water "in the soil. There is, however, a limit to the application of sewage which only experience can fix for "each description of soil,

"*5th.*—That vegetation appropriates to its own uses what the soil first absorbs and soon renders it 'capable of deodorizing another supply.

"*6th.*—That sewage must be applied to the land while quite fresh, and not allowed to stagnate 'anywhere.

"*7th.*—That sewage when made to flow down an incline plane surface under cultivation deposits all "solid matter held in solution, and might be collected at the lower end perfectly clear and comparatively pure.

"I shall now detail the results in produce. The eight beds under guinea-grass, measuring 3,644 "square feet, yielded on the average a cutting of about 3½ feet growth every month. The average "weight of each cutting was 1,300 lbs. when fresh, and 450 lbs. when made into hay. At this rate "the yield of green food per acre would be 83 tons per annum. A bundle of grass weighing "74 lbs. can be purchased, when grass is plentiful, for 5 Annas A ton at this rate would cost "Rupees 9-8-0. Valuing the yield of an acre under guinea grass at this price, the annual income "would be Rupees 788-8-0. Taking it even at a lower figure, say Rupees 7, it would still prove a most "remunerative crop as the labour required is very trifling. The first bed was planted in July 1869 and "has yielded since six cuttings without the soil being renewed, or the roots replanted. In fact the only "attention it has received is the turning on of sewage and cutting of the grass.

"The bed of the hurrialie-grass measures 1,166 square feet, the average yield of each cutting "140 lbs., and the average time between each cutting six weeks. From these data, the produce per "acre per annum would amount to 13 tons, which, at Rupees 9-8-0 per ton, shows a return of Rupees "123-8-0.

"A bed containing 1,606 square feet was put under cow-grass on the 6th of September 1869, four "cuttings have since been made, weighing on the average 190 lbs. A calculation based on this result "makes the yield of an acre per year 27½ tons, and valuing it at Rupees 9½ per ton, the annual income "amounts to Rupees 261-4-0.

"Various vegetables and cereals were also experimented with, and though several of them took "kindly to sewage, I have determined on not extending these trials at least for the present. The "produce is often stolen, and the price offered by whole-sale dealers is so small, as to make it doubtful "whether the proceeds would ultimately pay the cost of cultivation. The income from this source, up "to the 31st December 1869, was Rupees 20-2-3, and some idea of the quantity sold might be formed "from 100 heads of salad selling for 2 Annas, and 100 tomatoes for an Anna.

"It will be observed that these experiments were conducted on a very small scale; but this precau-"tion was essential to the success of the scheme. If failure attended any extensive undertaking, the "result would have been that sewage irrigation would be condemned for ever. There was no Indian "experience to fall back on in treating sewage, and if a large stream of it was operated with, and it "proved to be unmanageable, there would have been a great cry against any further trials. It was, "therefore, determined to proceed cautiously step by step; but the experience already gained is suffi-"cient to carry on operations on an extended scale during the current year.

"Before concluding this Report I think it of importance to allude to the vapours that issue from "the neighbourhood of the farm, so that they might be identified and not be erroneously attributed to "the sewage. There are fourteen burial and burning grounds, extending along the entire length of the "farm and lying between it and D'Mellow's Road. The smoke and odour from the burning pyres are "taken across the public roads by the prevailing winds To the north of the farm there are three bone-"cleaning depôts and two tanneries, and the combined smell from all these is often very strong on the "farm and vicinity. Since the commencement of experiments for utilizing sewage, these vapours are "often connected by the public with the sewage in the carriers, and I have therefore referred to it here "so that false opinion might not be formed of the farm."

The site chosen was about the worst it is possible to conceive. It was the basin of a back-water or lagoon connected with the sea. From time immemorial it had been flooded once, and generally twice each year with salt water from the sea. Each year this water had evaporated under the hot-season's sun, leaving behind it its saline constituents and depositing a saline mud of a peculiarly retentive and plastic character. Thus in process of time what had been a deep depression became filled with a deposit very many feet thick of this black clay, and the site had become a salt marsh rather than a back-water, although the land surface was still some feet below the high-water level of the back-water with which it was connected. The clay was so retentive that one tank within twelve feet of another has retained water 5 or 6 feet higher than in the second tank. At the present moment, although there has been no rain for nearly two months, one of the farm tanks is fully 5 feet higher than its neighbour, from which it is only separated by a road. The amount of salt in the soil is enormous. After cultivation has been going on for more than two years, a saline efflorescence covers the soil within a few days of its being allowed to rest. A few months ago it was not uncommon to find in the cultivated soil perfect nuggets of fine white salt, weighing from one-eighth to half an ounce, looking like oddly-shaped lumps of loaf-sugar. A soil thus saturated with elements obnoxious to vegetation must be perfectly barren. In fact, the farm site was a dreary expanse of bare mud upon which nothing grew, except occasional blades of saline grasses and moss.

Yet, for the purposes of the experiment, the site had one great advantage. Its condition was so bad that it could not be made worse. The prejudice against sewage farms formed by some of the Commissioners themselves, was so great that no other site would have had a chance of obtaining the sanction of the Commissioners. This advantage carried with it a second—that if, under these circumstances, a sewage farm could be made successful, the whole question was settled, for the principle could not but succeed better on any other spot.

The first thing to be done was to raise the ground above the reach of the monsoon seawater, and this was accomplished in the manner described in the extract from Mr. Lee's report already given. He has, however, omitted to explain that the street sweepings as deposited, were covered with earth, and it was necessary to dig deep tanks in order to provide this in sufficient quantity for the purpose. This

process, it will be observed, merely raised the ground without improving it, as the obnoxious clay was still on the surface in depth sufficient to bring its evil condition into full force. Probably as much as 25,000 tons of street sweepings were deposited on the ground.

The land was made over to the Municipality on the 7th June 1869. On the 11th July the first guinea-grass was laid down. On August 27th, 1869, the first crop was obtained. By the 31st December 1869, nearly three acres were under cultivation, and by February 1870, nearly four acres were reclaimed.

In September 1869, Captain Tulloch, the then Acting Sanitary Commissioner, made a most favorable report on the farm, which was forwarded (October 22nd, 1869) to Government by Dr. Ranking, who had then been appointed Sanitary Commissioner. His covering letter was encouraging but cautious. Government received the report with much satisfaction, and the papers were sent home where they drew much attention, and were deemed sufficient to prove that the whole question was at length solved.

This satisfaction was not to last long, and difficulties were met with during 1870 which interfered so greatly with the successful cultivation of the farm that Dr. Cornish, who had succeeded Dr. Ranking as Sanitary Commissioner, reported anything but favourably of the probable success of the experiment only eight months after the date of the latter's letter. As the hot season approached the heat drew the salt to the surface. The tank waters which had been used to dilute and supplement the sewage, fell short. Nothing would grow on the clay land, except after the greatest labour had been expended on the soil, and the utmost patience exercised in waiting for favourable results, Dr. Cornish's report (Appendix B) describes the state of the Farm in June 1870. It is necessary to quote a portion of this report.

A large quantity of guinea-grass has perished altogether; the hurrialie-grass is not looking strong; and the only grass which seems able to stand the sewage and thrive is a coarse swampy grass, which grows on the banks of the Cooum, and is not injured by salt. The botanical name of this grass I am not acquainted with, and, as it is not in flower, I cannot identify it; but it is said to be a good food for cattle, and, if further experience shows that it can be cultivated with success under sewage, it would, I think, be well to lay down more of it on the farm in D'Mellow's road, as it is apparently uninjured by the quantity of salt in the soil.

I am much more hopeful of the success of sewage irrigation on land which is naturally porous and sandy, and capable of absorbing large quantities of sewage. An experiment of this kind, on a piece of waste land between Triplicane and the sea, is contemplated by Colonel Denison, but has not yet been begun. I think it is of great importance that no delay should occur in experimenting with the Triplicane sewage with the view of seeing how far the soil may be in fault in the case of D'Mellow's road experiment.

In another letter of the same month Dr. Cornish remarked—"I am sorry to observe that the irrigation with sewage, since the hot weather has set in, has not been a success." With reference to these remarks it must be observed that Dr. Cornish did not give sufficient prominence to the fact that the supply of sewage was very insufficient to meet the demands of the land in the hot weather. More land was taken up than could be adequately supplied, and hence some of the vegetation perished through lack of sufficient sustenance to enable it to overcome the evils of its habitat. It was impossible to foresee how much land a certain quantity of sewage would irrigate (the whole scheme was but an experiment), and it was an error to ascribe to the action of the sewage what was really due to the absence of it. Nor was there the actual failure of which Dr. Cornish spoke. Certain beds had just been planted with tufts of grass, and the change of habitat naturally caused the already existing blades to wither, but the grass was taking root, and three months afterwards was growing luxuriantly in the very spot in which he stated it had been killed by the sewage. That portion of Dr. Cornish's report in which he notes the differences between Madras and English sewage is especially valuable, and should never be forgotten in any estimate of the action and powers of our sewage.

Notwithstanding the unfavourable condition of the farm in 1870, much valuable information had already been gained. It was shown beyond doubt that the grasses afforded the best means of utilizing sewage. Hurrialie, Guinea, and Cowgrass had displayed a marvellous power of absorption and purification of the sewage, and thus at all times. It was also learned, that on a farm circumstanced like this one, the crops thus grown are more profitable than any others both in certainty and value of the cash returns. It is, however, probable that with a large extension of cultivation it would be found both profitable and necessary to grow other crops as well. Guinea-grass gave the greatest weight of crop, but did not find a ready market, while it had the further disadvantage of requiring occasional change of soil. Cow-grass grows most readily and luxuriantly in the worst and most saline soils, but is not suitable for horse food, although greedily devoured by cattle. It has no sale, seeing that the native cow-keepers prefer to trust to scanty grazing on the Esplanades and waste lands round Madras than to purchase green food. Hurrialie grass is free from these objections. It grows very readily, speedily propagates itself by means of runners, is excellent food both for horses and cattle, and makes a splendid hay in no way inferior to English hay. It commands a very ready sale both as green and dry fodder, and will bear considerable extremes of drought and moisture It has, therefore, been ascertained that in the present state of the farm and of the market, hurrialie grass gives the most satisfactory returns with the maximum of convenience. Another important lesson was learned regarding the best mode of laying out the beds. Many systems of passing the water over the land were tried in the earlier experiments on the farm. Experience showed that sloped beds over whose surface the sewage would evenly flow by force of its own gravity gave on the whole the best results, and were more easily and economically managed. Hence in the early part of 1871 Mr. Loch decided to adopt that system, and requested Mr. Lee, and subsequently, myself to cause the whole of the cultivated land to be so laid out. Much difficulty was experienced because of the gradual but great subsidence of the newly raised land, as the masses of rubbish below decomposed and settled.

Owing to Mr. Lee's time being almost exclusively taken up with the carrying out of the Water Works, he was unable to give the same amount of attention to the farm that he had done when it was first formed, and things remained much in the state described above until May 1871 when the charge

of it devolved upon me. Mr. Loch desired that the farm should receive careful attention, and much time was at once given to investigating the causes which had led to an apparent want of success. From that time onwards I have to thankfully acknowledge the great aid that has been derived from the deep interest and constant counsel of Mr. Loch Dr Cornish has also evinced the greatest interest in the progress of the farm. It has already been explained that much difficulty was found in maintaining the grading of the beds as originally laid out by Colonel Denison and Mr. Lee. The rubbish buried beneath the farm was mainly vegetable. After fermentation the bulk of the deposited matter became vastly less, and with this diminution the whole surface sank very irregularly. In some places the subsidence was fully 3 feet, nowhere was it less than 1½ feet. This threw out the grading and prevented the proper flow of the sewage. My attention was therefore mainly given at first to the renewing of the grades and the laying out of longer beds. To perform this it was attempted, where practicable, again to raise the beds, and advantage was taken of the opportunity to do something towards sweetening and loosening the beds by the admixture of road-dust and ashes, and by deep spade husbandry. To provide a suitable slope for the beds, it was also found advisable to raise the sewage delivery channel. In some parts of the farm the new beds answered very well at first, and the grass seemed to spring well. In others not a blade of grass could be persuaded to come through, and in the height of the hot weather, August and September, the farm looked well nigh hopeless. The utmost patience and the most untiring labour were expended and apparently in vain. Meanwhile, in December 1870, Mr. Loch had written to Mr. Robertson, the Superintendent of the Government Experimental Farm, asking him to examine and report on the sewage farm, with a view to the discovery of the defects that so interfered with its progress. Mr. Robertson was not then able to give the requisite time, but on Mr. Loch's now repeating his request, Mr. Robertson was so good as to visit the farm more than once. Mr. Loch and Dr. Cornish accompanied him during most of his visits, and the height of the sub-soil water, the temperature of the sub-soil, and the condition of the land in various parts of the farm were carefully examined and noted. It clearly came out that the main cause of our want of success lay in the sub-soil water remaining too near the surface. The soil was so retentive and caked so entirely on its surface, that in the hot season water was found at from 4 inches to 2 feet from the surface. The former was actually discovered within 10 feet of a tank whose water-level was not less than 7 feet from the ground-level. This gave the key to our action. That part of the farm where we could get absolutely nothing to grow was, on Mr. Robertson's recommendation, immediately broken up to a depth of 18 inches and drained every 6 feet with pipes 4 feet under the ground-level. With marvellous rapidity we obtained an excellent crop of grass. This advance has been maintained, and these beds are now one of the most productive portions of the farm The supply of pipes running short many of the beds were drained less thoroughly by a layer of loose brick-bats about 6 inches in depth placed at the bottom of the drain cutting and then covered in. In others a thin earthen tile was placed at the bottom and the loose brickbats placed upon that. The closeness of the drains made up for their imperfection, and that portion of the farm is now almost too well drained, since the sewage runs through so freely that a large flow is necessary to ensure that the lower end of the bed shall be irrigated.

Such careful and thorough drainage is costly and requires much time. There has been neither means nor opportunity for covering the whole farm with such a net-work, though it is hoped that, in the course of time, the whole may be provided with drains 15 feet apart and 4 feet deep. In other parts of the farm the less satisfactory but very much less costly process of raising the surface above the sub-soil water has been adopted with the best results. The soil has been thoroughly pulverized by spade husbandry, loosened by the admixture of building rubbish, ashes, and some old manure, and many of the beds thus prepared are giving admirable returns.

There is now no hesitation in asserting that the problem at issue is so far solved that further progress is free from risk, and that our way is clear. With time and means, the whole cultivable area of the farm may now be made profitable and useful as soon as a sufficiency of sewage is obtainable. Our difficulty now is in the sewage, not in the soil. We could immediately double our area of cultivation and materially improve that we have were there more of the irrigating sewage.

The whole of the beds on the reclaimed land as well as those in that small portion of the farm which did not require to be raised are in full bearing, and there is no further difficulty in cultivation. Adequate drainage makes success certain, and the Choolay farm is now a commercial as well as a sanitary success. On an area of 2¼ acres under cultivation we now cut not less than 12,000 lbs. of hurrialie grass monthly, besides large but not ascertained quantities of guinea and cow-grass. It must also be remembered that several of the new beds have not yet come into full bearing, while from some no cutting has yet been made. Leaving this out of the question, the hurrialie grass alone, at 15 lbs. per anna our former price, gives a monthly return of Rs. 50, at 10 lbs. per anna, our present price, the return is Rs. 75 per mensem. The cost of establishment (there is no other charge except occasional new drain tiles) is Rs. 55, so that the farm is already somewhat more than clearing its expenses, while it is performing an enormous sanitary good in safely and innocuously employing sewage which, under any other system, was an evil demanding removal at any cost. But the establishment is ample for much larger cultivation, and will not be increased even if the area under grass be multiplied. The charge for superintendence need never be increased, though the whole area of about twelve acres be brought under grass. It is thus apparent that the proportionate profit will increase with every addition to the cultivated area.

The main point, however, is not the profit on the use of the sewage, but the fact that the sewage can be suitably, permanently, and innocuously disposed of. This point is definitely settled. If, under all the disadvantages with which the experiment was beset on the Choolay farm, a successful result has at last been to a considerable degree attained, it is morally certain th at sewage irrigation can always be safely and efficiently carried out in India. That it can also be made a commercial success is a subsidiary point which, however, adds an enormous incentive towards perseverance and adequate attention and care.

I have purposely kept out of sight the Kistnampett farm, as its conditions were altogether different, and success was never doubtful. The soil of nearly one-half the farm is pure sand—

the wind-blown sand of the sea-shore, to which the farm is contiguous. The rest of the farm is over an old rubbish heap covered with a thin stratum of the sandy soil of the other portion of the site. There has never been the slightest drawback to success in this farm. A porous soil has afforded no obstacle to that downward percolation which is the *summum bonum* of sewage irrigation. At first the small bed-flooding system was tried and, notwithstanding, the grass grew. In fact so porous a soil can stand any amount of fluid being poured on it. It absorbs like a sponge. The only difficulty has been in the sewage, the supply of which is very limited. In the pure sand the grass requires frequent irrigation, and if this be not given it withers and burns up the roots finding no sustenance. The results in this case are very remarkable, for, with adequate sewage, the grass on sand is most luxuriant. A crop nearly 3 feet high can be cut every month, while the deposit of the solid portion of the sewage is gradually darkening and enriching the soild, bidding fair to give in a few years an excellent open loam. For some reason or other this farm is very liable to attacks of caterpillars who, in three or four nights, will devour every green blade on the place. From a cultivated area of about two acres we have been able to supply 1,000 lbs. per diem of grass, where sewage is plentiful, and throughout the year have maintained an average of 800 lbs. daily. Taking the latter rate, the returns, at 15 lbs. per anna, are not less than Rs. 100 per mensem. At 10 lbs. per anna, the aggregate is Rs. 150. The monthly expense is only Rs. 42, and the farm yields a net profit of Rs. 60 per mensem. A considerably increased area has recently been placed under grass, but the returns from this are not included, as the deficient supply of sewage prevents all but occasional irrigation. The grass at this farm grows so thickly that at cutting the portion standing looks like a green wall 2¼ feet high.

The yield has been much increased by removing all the small beds and laying down long narrow beds of slope sufficient to cause the sewage to flow freely down. Experience has shown that where economy of sewage is desired the beds should not be more than 100 feet long, unless in places where a great slope can be given.

The following is Mr. Lee's description of the site, the cost of preparing it, and its early results.

" KISTNAMPETT FARM."

"The rubbish collected in the 3rd Sanitary District had been deposited for years in the low "ground behind the Capper House Hotel, and portions of the accumulation being found well decom-"posed and turned into manure, it was determined in 1870 to level as much of it as possible, and bring "it under the influence of sewage which was to be taken from a drain running through the grounds on "its way to the outlet into the sea north of the Hotel. The cost of raising, levelling, and grading the "ground, together with the sewage lift and carriers has been Rupees 946-0-8, and the maintenance for "three months amounts to Rupees 68-12-9, while the sale of the produce, consisting entirely of grass, "has realized Rupees 96-4-6. The extent under cultivation is 2¾ cawnies, of which one cawny and "eleven grounds were irrigated regularly with sewage, and the remainder got occasional doses of it.

"These results are highly satisfactory, and prove that sewage irrigation is both a reliable and "effective method. The too frequent repetition of a stimulant, such as sewage, often does more harm "than good, and defeats the very purpose it is intended to accomplish, but with due care and intelli-"gent adjustment to the condition and nature of the soil, the result is no longer problematical, and "when properly managed there is no danger to health to be apprehended."

The very extremes of the agricultural scale are met by the two farms described above. In one the soil holds water like a basin; in the other water runs through as in a sponge. In one the worst possible site was selected; in the other (with adequate sewage) all desirable advantages are found. In both the sewage has been safely, rapidly, permanently, and inoffensively disposed of. In both the process is profitable from a financial point of view and eminently successful from the sanitary side. In both grass presents as yet the most efficient and the least troublesome agent for absorbing and employing the deleterious components of the sewage, furnishing at the same time an admirable and innocuous article of food. Experience has shown that an enormous amount of sewage can be borne without injury by the grasses, but is equally explicit in proving that most profit can be obtained by a judicious limitation of the quantity applied, seeing that seven beds watered well, once a week, will produce far more than one bed watered with the full available quantity every day. Grass requires less frequent irrigation in proportion to its height. Immediately after cutting, a daily irrigation is profitable, but just before cutting, once in ten days is sufficient. Six or seven waterings is ample for a monthly crop.

After the most careful consideration of the subject, I am of opinion that the whole of the sewage of Madras may safely, economically, and profitably be utilized on sewage farms.

I have the honour to submit, for the favourable consideration of the President, a scheme for reclaiming and then utilizing as a sewage farm the whole of that dangerous and unsightly swamp between the Salt Cotaur station and the Powder Mills. I see no objection or difficulty in intercepting all the sewers that run from the western side of Black Town into Cochrane's Canal, conducting their contents in a pipe (leaving an overflow for storm waters) to the basin bridge, lifting the sewage there by a picotta or pump, and then carrying the fluid in pipes by the side of the basin and Railway bridges, and thus conveying it at a suitable height to the ground proposed to be reclaimed which the sewage would convert into a splendid and profitable garden.

The northern portions of the city and the southern districts of Trivatore and Washermanpettah could be similarly treated. The main drain being tapped and its contents lifted near the end of Thumboo Chetty Street, the sewage farm of the district being placed to the north of the great burial ground, or on the esplanade between the Railway and Singaratotam. South Black Town could be served by tapping the main drain near the Esplanade, Monument, and conveying its contents to a sewage farm that could be profitably and innocuously placed on the Camp Equipage esplanade where it would be faced on two sides by grave-yards, on the third by the Island, and on the fourth by half a mile from the nearest buildings except the lines of the Body Guard. This same farm would also serve the great suburbs of Chintadrepettah and the north of Triplicane, the sewage being carried across the river in an elevated pipe near Laybourn's bakery. This arrangement would at once remove the terrible nuisance of the main-drain at the north east angle of the Fort.

The Vepery and Choolay drainage could easily be diverted to the present Choolay farm, while Pursewalkum would find its natural outlet in a farm on the site of, or near our present Brick-kiln Depôt. It would, however, probably be found more expedient and profitable to convey this also to the Choolay farm.

There only remain the great suburbs of St. Thomé and Triplicane. The present Kistnampett farm is capable of great extension and would probably answer for both districts. If not, there is ample and convenient space for a farm to serve Triplicane, on the open ground at the back of the Coopum near the new Presidency College, not far from the spot were the Triplicane masonry drain ends. This site appears to me to be preferable to one in the Ice House cemetery and to require a shorter carriage of the sewage.

For St. Thomé there is ample ground in the marshes that bound it on all sides except the East.

I am aware that two of these sites would meet with opposition—namely, that on the Camp Equipage Esplanade, and that near the Triplicane Coopum. The first is near Government House, but no Madras wind follows the line that would join the two. This cannot be said so positively of the Fort, for the land and south-west winds passing over the farm might occasionally impinge on some outlying portion of the Fort. But after careful consideration and much experience, I do not think this is a valid objection. The nearest building in the Fort would be half a mile away from the point of discharge near St. Mary's burial ground. But beyond this it is contended that the sewage farm is innocuous, and that therefore the wind passing over it will not take up either dangerous or offensive elements. On this point it is necessary to stand. Captain Tulloch reported in 1869 concerning the Choolay farm. Regarding the question as to whether any evil consequences may arise to the inhabitants from the establishment of this farm, I believe, on the contrary, that the undertaking will produce the most beneficial results. "Good as are the effects at present, they will be more visible in the course of the next few months." Concerning these statements Dr. Ranking wrote:—"The opinion expressed regarding the sanitary aspect of the question I fully endorse, for although the extent of land brought under sewage irrigation is as yet small, and the amount of sewage itself thus disposed of very limited, yet viewed by the results that have been recorded in England and Bombay, there are no grounds upon which risk to the public health can reasonably be advanced. On the contrary, the experiment, so far as it has been worked out, promises well for the solution of the question that has so long agitated the public mind and engaged the attention of Government." In fact it opens up the question of the possibility of draining the city by sections and of utilizing the sewage of each section upon *adjoining waste lands*. In November 1869, Government remarked—"It is gratifying to find that as in England, grasses grow most luxuriantly on land irrigated with sewage; that the earth *deodorizes the sewage as soon as it touches it*, and that there are no complaints of nuisance from the irrigated land, nor of injury to health."

Nothing has since arisen to modify these views, though much to strengthen them. It needs no argument to prove that the English sewage farms are not unhealthy, or the cause of ill-health to their neighbours. The fact is notorious, nor is the case different here. The only nuisance can be the channel to the farm, but this cannot be worse than an ordinary street drain of which there are thousands in the city. But it is not proposed to carry the sewage in an open channel, but in a duly ventilated closed pipe. It will emerge from the pipe on to the land, where it will be immediately deodorized and rendered innocuous.

It is submitted therefore that the establishment of a sewage farm opens no question of danger even to its neighbours, much less so to persons half a mile off. But even if there were some offence, what a set-off would be given by the abolition of the Fort main drain.

Similar remarks apply to the farm proposed near the Presidency College, Coopum.

It will be excused if I stay for a moment to point out that I make these recommendations in the full knowledge that the responsibility of the health of the town has been placed upon me, and that the office I have the honour to hold, renders it my imperative duty not only not to recommend but urgently to oppose any arrangement that might imperil the health of any particular district. It is this sense of duty which has caused me to refrain from officially discussing the question till now when lengthened experience to the most careful and various observation entitles me to speak with that certainty which alone can justify the proposal of a plan which is sure to rouse the opposition of those who have not had the opportunity of gaining experience or making the necessary observations.

I have now gone through all the densely populated parts of Madras and attempted to show that in their immediate vicinity are spots available and very suitable for sewage farms; while the previous part of this Memo. has shown that sewage farms in Madras will fully answer the purpose for which they are intended.

It will be a matter of great gratification to me if the Commissioners should resolve heartily to enter upon a course of sanitary improvement in the line now suggested. I am convinced that at an expense comparatively trifling and without any great modification of the present lines of drainage, a most material sanitary reform may be carried through, causing an equally striking amelioration of the physical evils that now render Madras so unhealthy.

CHARLES E. GOVER,
Sanitary Officer.

APPENDIX D.

From S. JESUDASEN PILLAY, Municipal Collector, to Colonel A. RITHERDON, M.S.C., Officiating President of the Municipal Commission, Madras, dated Madras, 13th August 1872, C. No. 64.

SIR,—I have the honor to submit the report of the department under my charge for the past official year 1871-72.

1. The total amount of collections accruing from all sources and which were transmitted daily to the Bank through this department for the official year 1871-72 was Rupees 5,23,606-3-8, which may be particularized under the following Budget heads :—

1. House and Land Rates	Rs.	2,39,642	7	4
2. Trade License-tax		90,246	0	0
3. Liquor License-tax		11,722	0	0
4. Carriage License-tax		37,738	8	0
5. Cart Registration		13,049	12	2
6. Tolls		48,133	5	4
7. Miscellaneous		81,166	0	2
8. Ground rent		1,908	2	8
Total...		5,23,606	3	8

With regard to these the following observations are offered :—

HOUSE AND LAND RATES.

2. The Assessment Registers for 1871 were received from the Assessor on the following dates :—

1st	Division	Registers, on the	14th January 1871.
2nd	do.	do.	8th August „
3rd	do.	do.	21st December 1870.
4th	do.	do.	21st do.
5th	do.	do.	21st do.
6th	do.	do.	21st do.
7th	do.	do.	5th January 1871.
8th	do.	do.	21st December 1870.

Immediately after the Christmas holidays the preparation of bills and Check Registers were commenced with in respect to all the divisions, excepting the 2nd, the Registers of which were not received until the 8th of August 1871, owing to a general revision of that division having been made.

3. The bills for the year 1871 for the various divisions aggregated in number 31,336, and were issued to the Conicopillays in small batches, streetwarri. The dates on which the bills of the several divisions began to be issued, and on which the issue was completed, are given below :—

1st Division—	Issue begun 27th February 1871—	Issue completed	21st November 1871.
2nd do.	do. 17th August „	do.	10th January 1872.
3rd do.	do. 1st March „	do.	29th November 1871.
4th do.	do. 4th do. „	do.	21st September „
5th do.	do. 8th do. „	do.	30th November „
6th do.	do. 8th do. „	do.	12th October „
7th do.	do. 15th do. „	do.	30th November „
8th do.	do. 6th do. „	do.	26th October „

A great portion of the bills, against which rate-payers have appealed for alteration or amendment of Assessment, as per Section 81 of the Act, were kept back and issued for collection after the expiration of the official year under report.

4. The amount set down in the Budget as probable collection is Rupees 2,47,000, and the collection made from 1st April 1871 to 31st March 1872 is Rupees 2,39,642-7-4. This difference is owing to a portion of the current demand for 1871-72, viz., Rs. 7,264 having been collected in advance in the month of March 1871 and carried to the credit of the accounts for three months ending 31st March 1872.

5. The balance on the 1st April 1872, on account of arrears, is Rupees 10,812-3-10. This balance compare favorably with those of previous years being the smallest ever yet known to stand over on account of this tax. In the margin are the balances that remained uncollected at the close of the past seven years.

1866	Rs. 1,06,344
1867	„ 85,328
1868	„ 53,642
1869	„ 65,560
1870	„ 36,216
1870-71	„ 12,976
1871-72	„ 10,812

6. The following is the financial result of the working of this tax during the past official year :—

Balance of arrears on 1st April 1871		Rs. 12,976 6 9
Demand for 1871	2,51,791 1 0	
Deduct collections made up to in March 1871	7,694 5 4	
		2,44,526 11 8
	Total demand...	2,57,503 2 5
Collections from April 1871 to March 1872		2,39,642 7 4
		17,860 11 1
Remissions granted on account of vacant houses ...	4,310 14 10	
Remissions made by reason of no distrainable property being found, waste grounds, demolished houses, and for other obvious reasons ...	2,737 8 5	
		7,048 7 3
Uncollected balance on the 31st March 1872		10,812 3 10

This shows good and steady work in respect to the collection of this tax during the year under report. Two Statements, A & B, showing in detail the Demand, Collection, Remission, and Balance of this tax, for the three months ending March 1871, and for the official year 1871-72, are appended.

7. The Conicopillays have generally performed their work satisfactorily, and it is worthy of notice that not a single case of embezzlement occurred during the year. This is owing to the regular and systematic check that has been exercised over the bills entrusted to them.

Distraint Department.

8. The number of bills which were transferred to this department during the year under review, on account of defaulters, was 11,444, aggregating Rupees 59,779-9-10.

9. The total amount of the bills for which sales were held on account of distrained property aggregated Rupees 1,202-2-11. Twelve sales were held during the year. The net proceeds amounted to Rupees 687-10-2, of which Rupees 37-14-2 was realized in excess of the demand on certain bills. Of this surplus Rupees 18-10-3 were returned to parties entitled to receive them, and Rupees 14-6-10 credited to the Municipal Fund, as provided in Section 91 of the Municipal Act. Every effort has been made in this department, by two and three distraints, to realize all that can possibly be recovered, and it is only on its being ascertained for a certainty that there was no possible chance of any distrainable property being found that bills were recommended for remission.

10. It is to be regretted that of the three Distraining Inspectors in this department, one, Mr. D'Roza, proved altogether untrustworthy, having misappropriated the sum of Rupees 92-5-0 being the value of 26 bills. The Distraint Manager was greatly to blame in not having reported the state of this Inspector's accounts as he should have done. On filling up the appointment, it was suggested by this department that Distraining Inspectors should be required to give tangible security for the due and faithful performance of their duties.

11. The collection of fees for notices of demand and warrants, agreeably to Section 89 of the Act, amounted to Rupees 3,360-3-11, which met 76¼ per cent. of the cost of the Distraint Department for the year under notice, the expenditure having been Rupees 4,403-10-2 inclusive of commission allowed to the Inspectors. During the year 11,430 notices of demand and 4,599 distress warrants were issued.

12. In paragraphs 19 and 20 of the report of this department for the year 1870, it was suggested that the power for distraining moveable and immoveable property should be obtained for the Municipal Department similar to the powers vested in the Officers of Government charged with the collection of Quit-rent and Ground-rent. It was suggested that if similar powers were vested in the Municipality there would not be such arrears in the collection of Municipal taxes, nor such large sums written off as irrecoverable. With regard to the recovery of such dues through the Small Cause Court as provided in Section 95 of the Act, there appears to be a great difficulty in adopting that course. The majority of irrecoverable bills are for small sums, while their number is large, and to enter into legal proceedings for their recovery would be actually a waste of time, and doubtless, in most cases, where judgment might be obtained, the defaulters being very poor, and chiefly composed of such classes as coolies, chucklers, tank-diggers, potters, &c., would prefer being incarcerated in jail and maintaining themselves with the usual batta from the Municipality than to pay up their assessment. Sometimes there are cases of houses which have been locked up for years together, while the owners are the occupants, who keep their do rs constantly closed, to evade the warrants of the Small Cause Court, and of the Municipality; and in these cases, the difficulty of collection is great, as entrance within such premises cannot be effected at all. It will thus be, it is trusted, obvious that powers given to the Municipality ought to be more extensive to make the defaulters feel that they cannot evade payment, and that powers akin to those vested in the Collector of Madras for the collection of Quit-rent and Ground-rent should also be vested in the Municipal authorities.

Tax on Arts and Professions, Trade and Callings.

13. The amount entered in the Budget for 1871-72 was Rs. 87,500, and the collections amounted to Rupees 90,246, being in excess of the estimate by Rupees 2,746. From the Assessor's report it will be observed that a good proportion of this sum was realized as arrears.

Liquor License.

14. Under this head Rupees 11,722 was realized, while the estimate was Rupees 10,000, being Rupees 1,722 in excess.

Tax on Carriages, Horses and other Animals.

15. The budgeted amount for 1871-72 was Rupees 45,000, the actual collection amounted to Rupees 37,738-8-0, leaving a deficiency of Rupees 7,261-8-0. The collection of this tax, and the management of the Wheel-tax Department is at present entirely in the hands of the Assessor. No remarks are therefore called for from this department.

Cart Registration.

16. The sum entered in the Budget for 1871-72 was Rupees 12,500, the collections amounted to Rupees 13,049-12-2, being Rupees 549-12-2 in excess. This tax is always readily and fully realized. It is chiefly paid by those who have to take their carts frequently out of the Municipal limits, and who will be quite safe from the exaction of toll, on entrance, on the production of the license granted on registration.

Tolls.

17. The amount entered in the Budget was Rupees 49,000, the amount received from the Contractor was Rupees 48,133-5-4, *i.e.* at the rate of Rupees 4,083-5-4 for the first ten months, and Rupees 3,650 for the remaining two months.

MISCELLANEOUS.

	RS.	A.	P.
General Market	7,504	11	9
Strand rent	506	5	7
Fees on notices of demand and warrants.	3,360	3	11
Sundry miscellaneous bills ...	6,269	7	3
Total ...	17,640	12	6

18. The total amount received under this head was Rupees 81,166-0-2. Out of this amount Rupees 17,640-12-6 was collected directly by this department, as per margin, and the remainder was chiefly received from the Engineer's and Sanitary Inspector's departments.

19. Bills on account of hay and grass sold by the Municipality on credit, for work done, bulls hired, sale of manure, rents of pieces of public ground used for depositing building materials and scaffolding, rents of Municipal grounds let to people for keeping firewood, &c., were all transferred from time to time by the Sanitary Inspector and Executive Engineer to this department for collection. Of these 230 bills, aggregating to Rupees 6,269-7-3, as shown above in the margin, were collected by the house and land-rate and ground-rent Conicopillays, who are now obliged to perform this extra work in addition to their own proper duties. This system interferes with their collections, and it appears necessary that a separate Conicopillay should be engaged for the collection of these sundry bills.

GROUND-RENT.

20. The amount budgeted for 1871-72 was Rupees 6,000, and the actual collections were only Rupees 1,908, being Rupees 4,092 short of the estimate. Attention is solicited to the several reasons pointed at length in the report for 1870, paragraphs 36 to 39. As therein stated, great many persons have refused the payment of their bills, as they have discovered that the Municipality is utterly powerless to enforce payment. Unless the provisions of Act VI. of 1867 are extended to the Municipality, it will be absolutely impossible to collect these rents. It is therefore respectfully suggested that the existing state of the matter may be taken into consideration, and that Government be addressed early on this subject with the view of embodying the provisions of Act VI. in the Municipal Act, whenever it shall be revised, or else to provide such Bye-laws as may appear necessary for the more satisfactory collection of this rent. Prosecutions arising from any of these cases in the Small Cause Court would be attended with considerable difficulty and much expense. The sums for which bills are issued, are invariably so very small that more annoyance would follow should the system of prosecuting parties be adopted, a course which will doubtless result in no gain to the Municipality. For instance, during the last year two prosecutions were undertaken against persons who owed pretty large sums. In one case, a woman who had a tiled house built on a piece of public ground, near the Seven Wells, refused to pay ground-rent on the plea that she had never paid ground-rent for the same to the Madras Collector's Department for the past 30 years—the period during which she was the occupant. Although the books of the Deputy Collector's Office showed that the ground so occupied by her belonged to Government, the case was dismissed by the Judge, simply because no tax was ever collected from her by the Madras Collector's Department during the time cited.

The other case was that of a person occupying a valuable piece of Municipal ground near the 2nd Line Beach, whereon he used to deposit timber. Against him a judgment decree for Rupees 172-4-8 was obtained for non-payment of ground-rent due by him for three half-years ending 31st December 1871. The warrant was with some difficulty enforced, and property valued about 10 Rupees seized and sold by the Small Cause Court. The man is determined not to pay, and absolutely refuses to quit the Government ground in his occupation, and pleads poverty. To eject him therefrom would be expensive and troublesome. Already some money has been spent from the Municipal Funds in these two cases, which clearly shows that prosecutions in the Small Cause Court are of little avail.

21. In concluding this brief narrative of the year's transactions, it may not be out of place to draw attention to the satisfactory condition of the revenues of the Municipality. There has been an augmentation of receipts under several items during the year under review. The work of collection, too, has been satisfactorily performed by the Conicopillays, &c., with less resort to coercive processes than in the previous year.

22. The accounts of the Department are clearly and neatly kept, and an efficient system of check maintained on the whole, though in the Distraint Department, one unsatisfactory instance has occurred as stated in para. 10. It is hoped that the results of the year, and the manner in which the duties and responsibilities of this Department have been discharged, will meet with the approval of the Commissioners and the Government.

A.

Balance Sheet *of Rates on Houses, Buildings, and Lands for the three months ending* **31st** *March* **1871.**

	1st Division.	2nd Division.	3rd Division.	4th Division.	5th Division.	6th Division.	7th Division.	8th Division.	Total.
DEMAND.									
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
Arrears of, and anterior to, 1869 ...	379 7 2	*581 8 6	401 12 8	699 12 6	548 5 1	1,499 7 10	1,276 1 4	1,442 0 4	6,778 7 0
Arrears of 1870...	1,710 10 9	1,648 8 8	7,059 0 7	4,882 9 11	3,760 2 4	2,094 2 0	5,327 11 3	3,460 4 6	29,437 13 0
	2,090 1 11	2,174 12 2	7,460 12 10	5,082 6 5	4,308 7 5	3,593 9 10	6,603 12 7	4,902 4 10	36,216 4 0
Demand for the year 1871	22,962 13 0	46,575 3 10	64,720 11 0	4,706 10 6	35,634 7 11	22,645 15 4	32,688 14 4	21,856 5 1	2,51,791 1 0
Total ...	25,052 14 11	48,750 0 0	72,181 7 10	9,789 0 11	39,942 15 4	26,239 9 2	39,292 10 11	26,758 9 11	2,88,007 5 0
COLLECTION.									
Arrears of, and anterior to, 1869	9 0 9	87 9 2	118 8 8	345 9 4	55 12 5	858 7 8	176 9 5	89 8 6	1,691 1 6
Arrears of 1870...	1,168 5 5	892 10 3	5,369 12 8	2,447 9 6	2,557 9 0	1,380 0 4	4,063 8 3	2,299 12 6	20,179 3 11
For the year 1871	376 10 9	... ...	3,878 15 9	768 2 5	725 3 8	779 1 8	222 14 5	513 4 8	7,264 5 4
Total ...	1,554 0 11	930 3 5	9,367 4 8	3,561 5 8	3,338 9 1	3,017 9 8	4,463 0 1	2,902 9 8	29,134 10 9
REMISSION.									
Arrears of, and anterior to, 1869... ...	... ...	... ...	... ...	37 11 2	41 6 7	21 5 4	20 0 8	10 1 10	130 9 7
Arrears of 1870...	73 8 11	61 4 3	344 1 9	127 9 1	241 14 8	85 14 2	113 0 11	191 8 6	1,238 14 3
For the year 1871	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...
Total ...	73 8 11	61 4 3	344 1 9	165 4 3	283 5 3	107 3 6	133 1 7	201 10 4	1,369 7 10
BALANCE.									
Arrears of, and anterior to, 1869	370 6 5	493 15 4	283 4 0	316 8 0	451 2 1	619 10 10	1,079 7 3	1,342 6 0	4,956 11 11
Arrears of 1870	468 12 5	689 5 2	1,345 2 2	1,807 7 4	960 10 8	628 3 6	1,151 2 1	968 15 6	8,019 10 10
For the year 1871	22,586 2 3	46,575 3 10	60,841 11 3	3,938 8 1	34,909 4 3	21,866 13 8	32,465 15 11	21,343 0 5	2,44,526 11 8
Balance on the 31st March 1871	23,425 5 1	47,758 8 4	62,470 1 5	6,062 7 5	36,321 1 0	23,114 12 0	34,696 9 3	23,654 5 11	2,57,503 2 5

unicipal Collector's Office, Madras, 13th August 1872.

*8 Pice added, as it was paid in erroneously in excess of a bill.

S. JESUDASEN, *Municipal Collector.*

B.

Balance Sheet of *Rates on Houses, Buildings, and Lands for the year* 1871-72.

	1st Division.	2nd Division.	3rd Division.	4th Division.	5th Division.	6th Division.	7th Division.	8th Division.	Total.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
DEMAND.									
Arrears of, and anterior to, 1869... ...	370 6 5	498 15 4	283 4 0	316 8 0	451 2 1	619 10 10	1,079 7 3	1,342 6 0	4,956 11 11
Arrears of 1870...	468 12 5	689 5 2	1,345 2 2	1,807 7 4	960 10 8	628 3 6	1,151 2 1	968 15 6	8,019 10 10
	839 2 10	1,183 4 6	1,628 6 2	2,128 15 4	1,411 12 9	1,247 14 4	2,230 9 4	2,311 5 6	12,976 6 9
For the year 1871	22,586 2 3	46,575 3 10	60,841 11 3	3,938 8 1	34,909 4 3	21,866 13 8	32,465 15 11	21,343 0 5	2,44,526 11 8
Total ...	23,425 5 1	47,758 8 4	62,470 1 5	6,062 7 5	36,321 1 0	23,114 12 0	34,696 9 3	23,654 5 11	2,57,503 2 5
COLLECTION.									
Arrears of, and anterior to, 1869	146 6 4	233 0 9	216 14 6	72 8 9	123 14 9	345 5 2	260 1 9	220 7 0	1,618 11 0
Arrears of 1870	328 13 5	424 11 2	1,165 11 5	1,420 11 9	712 12 9	399 14 3	636 7 1	563 11 10	5,652 13 8
For the year 1871	21,254 4 10	44,368 11 4	58,451 15 1	3,669 5 3	33,020 6 5	20,761 3 7	30,927 15 1	19,917 1 1	2,32,370 14 8
Total ...	21,729 8 7	45,026 7 3	59,834 9 0	5,162 9 9	33,857 1 11	21,506 7 0	31,824 7 11	20,701 3 11	2,39,642 7 4
REMISSION.									
Arrears of, and anterior to, 1869... ...	38 15 1	188 11 8	26 5 8	118 11 11	218 0 2	113 11 5	225 7 6	514 7 4	1,444 6 9
Arrears of 1870	56 2 2	127 13 1	99 15 10	212 8 3	120 13 3	74 1 2	124 6 2	174 2 9	989 14 8
For the year 1871	335 11 5	232 1 5	1,407 8 0	118 5 7	799 10 5	624 4 3	444 6 3	652 2 6	4,614 1 10
Total ...	430 12 8	548 10 2	1,533 13 6	449 9 9	1,138 7 10	812 0 10	794 3 11	1,340 12 7	7,048 7 3
BALANCE.									
Arrears of, and anterior to, 1869	185 1 0	72 2 11	39 15 10	125 3 4	109 3 2	160 10 3	593 14 0	607 7 8	1,893 10 2
Arrears of 1870	83 12 10	136 12 11	79 6 11	188 11 0	112 9 0	154 4 1	390 4 10	231 0 11	1,376 14 6
For the year 1871	996 2 0	1,974 7 1	982 4 2	150 13 3	1,089 3 5	481 5 10	1,093 10 7	773 12 10	7,541 11 2
Total ...	1,264 15 10	2,183 6 11	1,101 10 11	464 11 7	1,310 15 7	796 4 2	2,077 13 5	1,612 5 5	10,812 3 10

Municipal Collector's Office, Madras, 18th August 1872.

S. JESUDASEN, *Municipal Collector*.

CONTENTS.

ASSISTANT ENGINEER'S ANNUAL REPORT.

APPENDIX F.

From W. STEPHENSON, Esq., Assistant Engineer, to the Executive Engineer, Municipal Commission, Madras, dated Municipal Executive Engineer's Office, Madras, 31st August 1872.

SIR,—To enable you to submit your Annual Report to the President I beg to forward a report of the works under my immediate supervision during the official year 1871-72.

MAIN DRAINAGE.

The completing of the screw-pile drain to carry off the sewage from the main drain at the north-east angle of the Fort was under the entire supervision of Mr. C. E. Gover, lately a Commissioner of the 5th Division, and since apponited Sanitary Inspector. That gentleman had charge of the work up to November 1871, and to his exertions is due an expenditure of Rs. 2,682-3-8. Since April 1872 the work was handed over to me, and at the suggestion of the Officiating President, at the time Mr. J. C. Loch, the completing of the sewage lift and discharging it by steam into the pipes was given over to Mr. A. DeClosetts, C. E., who is now engaged in the work. This system was adopted, as it was found from calculation to be a cheaper method of lifting the sewage than by a bucket pump worked by bullocks, as was proposed by Mr. Gover; the annual expenditure on the bullocks and drivers would have been heavy. Piles have been driven in for the purpose of carrying the pipes further out into the sea, and the clamps and ties for keeping the pipes in their position have been ordered at the Government Workshop, Chepauk.

CUDDAPAH LIME-STONE DRAINS.

The Commissioners having reduced the grant this year for new drains from Rupees 50,000 to Rupees 5,000 much has not been done. The following are the streets in which they have been laid :—

					RS.	A.	P.
1.	Cundappah Moodelly High Road, Pursewaukum,	2,750	running feet ...	...	1,933	0	10
2.	Pursewaukum High Road, joining Colunday Gramany Lane	30	do.		23	0	6
3.	Chellappa Gramany Lane, Pursewaukum ...	858	do.				
4.	Arasappa Moodelly Street, do. ...	1,170	do.				
5.	Mootteealoo Naick Street, do. ...	796	do.				
6.	Paroomall Naick Street, do. ...	1,090	do.				
7.	Paroomall Chetty Street, do. ...	950	do.				
8.	Solyammen Street, do. ...	400	do.				
9.	Thondava Ausaury Street, do. ...	770	do.				
		6,064	do.	... ...	2,341	3	9
10.	Shadagopa Iyer Street, Black Town ...	570	do.	... ...	329	13	9
11.	Cuddapah stone supplied for DeMellow's Road covered drain			... ...	725	8	6
				Total ...	5,352	11	4

DIVERSION OF THE CHOOLAY MAIN DRAIN.

This work, which was completed in August 1870, has been working very well during the year under review, and has not required any repairs.

GENERAL DRAINAGE WORKS.

The following are the most important works that have been executed under this head :—

			RS.	A.	P.
1.	Constructing	a drain at the junction of Thumboo Chetty Street and China Bazaar Road, Black Town	22	15	10
2.	Do.	a covered drain in Janghere Street, Black Town	86	5	7
3.	Do.	a side open drain round the well in Linghey Chetty Street, Black Town	14	4	1
4.	Extending	side drains at the junction of Andeappa Gramany Street and Munnaroosawmy Covil Street, Royapooram	23	1	5
5.	Constructing	a tile drain under the foot-path in Cundappah Moodelly High Road, Pursewaukum	178	1	0
6.	Do.	Veerasawmy Moodelly Street, Pursewaukum	159	3	2
7.	Do.	a cross drain in Pursewaukum High Road at the junction of Doveton College Compound	105	1	7
8.	Do.	a cross drain in People's Park	55	8	9
9.	Do.	a portion of side drain in Vadagherry Maistry Street, Chintadrepettah	69	13	6
10.	Do.	a cross drain in Aroonachella Naick Road, Chintadrepettah ...	151	14	11
11.	Do.	two cross drains in Cox Parcherry, do. ...	34	2	9
12.	Do.	a cross drain in Wood's Road, near the Madras Club	88	4	7
13.	Do.	two cross drains in White's Road, Poodoopauk	77	3	11
14.	Do.	a covered tile drain in Baula Moottoo Moodelly Street, Triplicane ...	327	9	1
15.	Do.	a tile drain leading to the Bridge in South Beach Road across the nullah of Triplicane Coopum	416	14	10
16.	Laying	6-inch tiles for the drain leading to the Sewage Farm in Kistnampettah...	605	12	0
17.	Constructing	a cross drain in Meeran Sahib Street, do. ...	47	10	6
18.	Do.	do. in Cundappah Moodelly Street, do. ...	37	2	4

	RS.	A.	P.
19. Constructing a cross drain leading to Kistnampettah Cart Depôt	22	14	8
20. Do. do. in Kistnampettah Cart Depôt	30	8	0
21. Extending a cross drain at the south end of Vencatarunga Pillay Street, Kistnampettah	66	14	10
22. Constructing a cross drain at the junction of Vencatachella Moodelly Street and Chunda Sahib Street, Meersaibpettah	25	11	6
23. Constructing a cross drain in St. Thomé Bazaar Road	85	12	8
24. Earthenware drain pipes imported from England	1,673	6	0
60. Drains and their appurtenances either rebuilt, repaired, improved, or extended and lands purchased for the above	2,076	5	2

TINNEVELLY SETTLEMENT.

As the improvement of this Settlement was undertaken by the Sanitary Department nothing has been done by this Department, excepting the following :—

1. Raising the ground for the erection of Model Parcherry in Monegar Choultry Esplanade Road East	449	14	6
2. Construction of Model Parcherry, &c.	3,005	1	10
Total ...	3,455	0	4

URINALS.

No new ones have been erected during the current year.

FOOT PATHS.

No new ones have been erected, but the following extended :—

1. Pursewaukum High Road in front of Garden No. 91, opposite Gengadra Easwarer Pagoda Tank, 642½ feet in length extended...	281	3	3
2. South Beach Road, the foot-paths extended to the Victoria Bridge	423	13	10
3. Ramanen Street, Black Town, 752 running feet of the Cuddapah Blue-stones for foot-path fixed and ground raised	36	4	10
Total ...	741	5	11

FIRE ENGINES.

These Engines have been greatly used in pumping the water out of the excavations made for laying the pipes, and the expenditure of Rs. 69-6-6 incurred has been for the repairs done to them.

The number of fires that broke out during the year have been four, and I regret to report six deaths, but these were owing to one of the fire-work bazaars exploding while the people were at work in it.

The Establishment has cost during the year Rs. 536, which, together with the cost of repairs above mentioned, make a total of Rs. 605-6-6 for the protection of life and property from fire.

LINES OF FRONTAGE IN STREETS.

It was only on 24th August 1871 that by order of the President this department was to grant permissions for certain description of buildings, when a Building Overseer on a salary of Rs. 65, including horse allowance, was appointed, and since then 390 applications for buildings have been received and inspected, 270 for which permits were granted by this department, and the remaining applications were transferred to the Sanitary Department for disposal in accordance with the instructions of the President.

The Bye-Laws for the regulation of the height of buildings in first-class streets have been observed.

DANGEROUS STRUCTURES.

Eighteen notices to remove buildings, or portions of buildings, in ruinous conditions have been received and attended to, after, of course, serving the usual 24 hours' notice required under Section 198 of the Act, and these notices were prepared and served by this department.

MUNICIPAL BULLOCKS.

No purchases were made during the year. They were engaged in rolling, ploughing, watering, and carting clippings of avenue trees, road-dust, manure, earth, &c.

The cost of the feed and the amount of work performed by them stands thus—

				RS.	A.	P.
To amount of work done during the year valued at Contractor's rates... ...				3,893	0	0
Cost of feeding 10 pairs for 15 months	2,146	8	4			
Salary of Establishment	924	1	3			
Ropes, shoeing, &c.	130	15	3			
				3,201	8	10
Balance to credit ...				691	7	2

WATERING ROADS.

As hitherto, the Mount Road from Wallajah Bridge to Neill's Statue, a distance of 3,000 yards, has been regularly watered at a cost of Rs. 2,817-2-4.

The North Beach Road has been watered as in previous year, we still paying to the Collector of Sea Customs a moiety of the expenses—the charge on the Municipal Fund for 1871 and to 31st March 1872, Rs. 1,125-0-0.

The General Hospital Road was, during the hottest seasons, watered from January to August 1871, between Hospital Bridge and the Medical College, at an expense of Rupees 208-5-8.

Popham's Broadway has been watered since October last from the General Post Office to the China Bazaar Road, at the cost of Rupees 65-4-8. This portion of the road was watered by the sanction of the President on a representation of the Shop-keepers, &c.

Dust-bins.

512 stone dust-bins have been erected at a cost of Rupees 5,009-1-9 and 41 masonry dust-bins repaired at a cost of Rupees 117-14-6.

Fencing the Banks of the Cooum.

Only 216 yards of stone-and-palmyrah fencing has been done during the year from the end of the Napier Park fence to Colonel Lawe's Bridge at a cost of Rupees 384-7-11.

Municipal Cart Depot.

Rupees 447-8-5 has been spent on the repairs of the cart-sheds at Choolay, Perambore, and the Trevelyan Water Works.

Rupees 2,239-1-4 were spent for the following cart-stands :—

		RS.	A.	P.
1.	Poonamallee Road Cart-stand, for forming a road	413	10	0
2.	Stephenson's Road Cart-stand, excavating a tank, removing prickly-pear, and putting a fence with granite stones and palmyrahs, &c.	1,794	9	9
3.	Land purchased in Mahomed Hoossain Street for widening a road leading to cart-stand in Chintadrepettah	26	13	1
4.	Sundries	4	0	6

Rupees 226-3-7 were spent on the construction of the following cart depôts :—

1.	For wooden railing in Cart Depôt, Napier Park	104	0	7
2.	For reforming the road within the Choolay Cart Depôt	122	8	0

Public Wells.

The following is a list of the public wells the parapets of which have been raised and repaired in compliance with the Bye-Laws :—

		RS.	A.	P.
1.	Repairing the parapet wall of a well in Numbooliar Street, Black Town ...	2	13	6
2.	Constructing parapet wall of a well attached to the brick-field in Poonamallee Road	24	7	0
3.	Repairing parapet wall of a well in China Bazaar Esplanade Road	6	0	6
4.	Do. do.	6	10	4
5.	Do. do.	7	10	10
6.	Constructing parapet wall of a well in Davaroya Moodelly Street	4	6	4
7.	Do. Gengaramen Lane	3	4	5
8.	Do. Vullappen Thotty	4	6	5
9.	Do. General Hospital Road	2	6	0
10.	Do. Hoossain Saib Street	3	8	4
11.	Do. Ummen Covil Street	2	8	0
12.	Do. Mathalencherry Street	1	9	0
13.	Constructing parapet wall of a well in Harris' Road	5	13	2
14.	Repairing wells on the Island	4	1	11
15.	Constructing parapet wall to a well in Burghall's Stable	9	3	2
16.	Repairing pecottah attached to a well near the male latrine west of Grass-cutters' Parcherry	0	12	0
17.	Constructing parapet wall to a well back of Burghall's Stable	4	8	4
18.	Repairing cistern, well, and pecottah in Lingy Chetty Street, Black Town ...	34	8	5
19.	Do. parapet wall of a well in Isack Street	5	6	0
20.	Building an inner wall of a well in Senoo Moodelly Street, Black Town ...	79	5	0
21.	Levelling and paving with blue stones to a well in Linghy Chetty Street, Black Town	32	4	0
22.	Removing and plastering the parapet walls of wells in Vurda Mootteappen Street, Moollah Saib Street, and at the junction of Govindappa Naick and Annah Pillay Streets	6	13	0
23.	Plastering the parapet wall of a well at the junction of Tholasingen Street, Black Town	3	6	1
24.	Repairing parapet wall of a well in General Moottiah Moodelly Street ...	2	6	9
25.	Do. do. Nattoo Pilliar Covil Street	2	5	6
26.	Cleaning, deepening, and making banks to the tank in Parasoorama Moodelly Street, Perambore	87	14	10
27.	Sinking pot-well, &c., in the Store Compound of Trevelyan Water Works ...	39	8	6
28.	Raising parapet wall of a well in Trevetroor High Road	4	1	2
29.	Repairing the do. do. on the Island	1	14	7
30.	Constructing do. do. near the Tannah at Wallajah Bridge ...	4	13	4
31.	Do. in Lingy Chetty Street at the junction of Odacal Street ...	5	12	2
32.	Repairing a well in Andeappa Naick Street	8	15	10
33.	Do. the valve of Norton's Tube Well	1	6	0
34.	Do. well in Veerappen Street	4	3	4
35.	Do. parapet wall of a well in Trevelyan Water Works	7	11	3
	Total...	426	13	0

No expenditure under the head of New Wells.

LATRINES.

Seven public latrines have been constructed, at a cost of Rs. 2,395-13-1, in the following localities :—

			RS.	A.	P.
1 Male and Female Latrine		in Naval Hospital Road, Pareamettoo	382	5	8
1	do.	in Narrainapa Naick Street, Pulle Teynampettah ...	317	10	4
1	do.	in Chuckly Polliem, Perambore	384	5	3
1	do.	in Cox Parcherry, Chintadrepettah, including purchase of lands	414	1	11
1	do.	Alley Goontah in Esoody Khan Bahadoor Street, Triplicane	447	6	4
1	do.	Vadagherry Maistry Street, Chintadrepattah ...	500	0	0

Thirty-two temporary latrines were constructed by the Sanitary Department at a cost of Rupees 380-3-8, as follows :—

			RS.	A.	P.
10	tatty-latrines	at Ameer Baugh Parcherry	124	9	2
3	do.	near Railway Bridge, Royapooram	47	6	10
1	do.	in Perambore, Chuckly Polliem	24	12	8
2	do.	near Cochrane's Basin Road	31	9	8
6	do.	in Oodday Parcherry...	19	9	0
6	do.	Cassemode	107	0	9
2	do.	Fishermen Huts, Adyar	16	11	7
2	do.	Soopary Goontah Parcherry	8	8	0

Twenty latrines repaired at a cost of Rupees 581-4-1.

CINERATORS.

Only two Cinerators were constructed, one on the north of the town near the Arrack Distillery, at a cost of Rupees 917-1-5, and one in Naval Hospital Road, at a cost of Rupees 1,118-5-6.

The cost of repairs to Cinerators are as follow :—

					RS.	A.	P.
2nd	Division	1,	At the	Trevelyan Water Works	3	15	8
5th	do.	1,	do.	Brick kiln Road	155	0	10
8th	do.	1,	do.	Barber's Bridge Rubbish Depôt...	142	4	11
„	do.	1,	do.	Ice House Burial and Burning Ground	341	12	3

ROADS.

The total expenditure under this head during the official year 1871-72, and first three months in 1871 was Rs. 92,435-3-1, and consists of the following items :—

	RS.	A.	P.
Reforms and repairs	75,913	8	1
New metalling	9,508	9	4
Watering and rolling	2,214	5	3
Widening and raising	4,770	12	8
Removing dust from roads	27	15	8

The total quantity of work executed under the first two items is as follows:—

ABSTRACT FOR 1871-72.

Description of Work.	Laterite. Mileage. M.	F.	Y.	Laterite. No. of Squares.	Laterite. No. of Cubic Feet of Work.	Granite. Mileage. M.	F.	Y.	Granite. No. of Squares.	Granite. No. of Cubic Feet of Work.	Total. Mileage. M.	F.	Y.	Total. No. of Squares.	Total. No. of Cubic Feet of Work.	Remarks.
MUNICIPAL ROADS.																
Reforms & Repairs...	17	6	104	13,453	4,55,516	3	4	117	2,755	1,09,856	21	3	1	16,208	5,65,372	For 12 months in 1871-72.
	1	4	153	933	27,180	...	3	187	372	14,345	2	...	120	1,305	41,525	1st 3 months in 1871.
New Metalling	5	5	23	3,457	1,16,460	...	3	84	390	12,913	6	...	107	3,847	1,29,373	For 12 months in 1871-72.
	...	5	4	196	5,277	...	3	90	223	7,600	1	...	94	419	12,877	1st 3 months in 1871.
Emergent Repairs ...	103	3	118	9,663	1,61,050	...	...	...	...	...	103	3	118	9,663	1,61,050	For 15 months in 1871-72.
Total...	129	...	182	27,702	7,65,483	4	7	38	3,740	1,44,714	134	...	...	31,442	9,10,197	
ESPLANADE ROADS.																
Reforms & Repairs...	8	1	42	8,303	2,61,898	3	7	92	4,376	1,78,190	12	...	134	12,679	4,40,088	For 12 months in 1871-72.
	...	4	132	590	20,360	...	4	...	800	28,000	1	...	185	1,390	48,360	For 1st 3 months in 1871.
Emergent Repairs ...	16	6	121	4,832	80,533	...	...	53	...	...	16	6	121	4,832	80,533	For 15 months in 1871-72.
Total...	25	4	75	13,725	3,62,791	4	3	145	5,176	2,06,190	30	...	...	18,901	56,68,981	
Grand Total...	154	5	37	41,427	11,28,274	9	2	183	8,916	3,50,904	164	...	...	50,343	14,79,178	

The total length of roads newly formed and repaired was

	M.	F.	Y.
Reform and partial repair with laterite	28	0	211
Do. do. with granite	8	4	9
Newly formed with laterite	6	2	27
Do. do. granite	0	6	174
Maintained by Coolies working under the supervision of the Departmental Maistries	120	2	19
Total ...	164	0	0

The following is a Comparative Statement of work executed during the past three years :—

——	1871-72. 15 Months.		1870.		1869.	
	Squares.	Cubic Feet.	Squares.	Cubic Feet.	Squares.	Cubic Feet.
Reforms and Repairs	35,848	12,37,595	32,408	9,71,928	39,966	13,51,046
Emergent Repairs	14,495	2,41,583	9,517	1,58,616	9,791	1,66,183
Total...	50,343	14,79,178	41,925	11,30,544	49,757	15,17,229

The expenditure incurred during the past eight years stands thus—

	1871-72. 15 Months.	1870.	1869.	1868.	1867.	1866.	1865.	1864.
Rupees	93,436	76,970	1,13,140	70,418	57,514	1,23,168	1,11,865	1,17,526

The average expenditure per annum for the last three years is Rs. 86,937-0-0, and the average length of roads reformed and partially repaired during the same period 46 miles. The cost per mile Rs. 1,932.

The following 43 streets were newly formed and metalled during the year :—

		RS.	A.	P.
1.	Appasawmy Moodelly Street, Black Town	62	13	2
2.	Moodookisten Street, do.	70	4	0
3.	Moollah Sahib Street, do.	36	12	0
4.	Jaffer Serong Street, North do.	17	0	0
5.	Road leading from Trivattoor High Road to Elyah Moodelly Street ...	442	0	0
6.	Road leading from Trivattoor High Road to Auroonachella Easwarer Covil Street.	147	6	8
7.	Soorea Narrina Chetty Street, Tondear Pettah	775	6	0
8.	East side Maudah Church Road, Royapooram	122	0	3
9.	Ponnuppah Chetty Street, Black Town	117	5	0
10.	Tholasingen Street and Lane do.	81	2	6
11.	Dare Mooneesawmy Moodelly Street, do.	47	3	0
12.	Vadagherry Maistry Street, do.	109	6	8
13.	Theroopully Street, East do.	75	9	0
14.	Moor Street, North do.	72	12	0
15.	Munnady Street, East portion completed do.	22	5	0
16.	Parea Woodundy Lane do.	12	14	0
17.	Maraca Lubbay Street, do.	18	8	2
18.	Mylay Pareathumby Street, do.	70	3	6
19.	Vencatachella Maistry Street, do.	214	15	10
20.	Mootoomaree Street, do.	201	3	1
21.	Iyappen Street do.	209	5	2
22.	Vencatachella Moodelly Street, Choolay	170	5	2
23.	Road leading to sewage farm in DeMellow's Road, Choolay	623	8	0
24.	Thottecalay Comarappa Moodelly Street, Choolay	172	14	5
25.	Perambore Barracks road through Doveton College compound	395	6	6
26.	Rutler's Street, North portion, Choolay	68	7	0
27.	Meneaud's Lane, Pursewalkum	110	15	5
28.	Sawmy Moodelly Street, Vepery	10	6	1
29.	Cundapah Moodelly High Road, Pursewaukum	109	2	6
30.	Padavuttunmmen Covil Street	100	8	0
31.	Letang's Road	437	9	7
32.	Vencatummall Samady Street	366	8	0
33.	Codumbaukum Road, South	81	5	4
34.	Carem Modeen Sahib Street, Narasingapooram	15	1	11
35.	South Beach Road near Victoria Bridge	278	8	5

	Rs.	A.	P.
36. Auremoottoo Maistry Street	813	4	1
37. Road leading to the Kistnampettah Cart Depôt, Mylapore	879	6	8
38. Corna Easwarar Covil Road, Mylapore	188	5	0
39. Yellapathall Mandah Church Road, Mylapore	610	7	9
40. Road leading from Kistnampettah Sewage farm from Edward Elliot's Road ...	345	12	9
41. Meeran Sahib Street, Kistnampettah	253	7	1
42. Eroosappa Gramney Street, do.	43	2	4
43. Cundappah Moodelly Street, do.	102	14	1
Land purchased for extending Balakistna Pillay Street towards Cox Street in Chintadrepettah	403	11	7
Do. do. for widening Vadagherry Maistry Street, Chintadrepettah ...	58	6	8
Do. do. for connecting Trivattoor High Road with Auroonauchella Easwarer Covil Street	200	0	0
Minor Works	738	10	10
Total ...	9,508	9	4

LIGHTING.

* Kerosene Oil	1,109
Common "	517
Total...	1,626

Street Lamps now number 1,626* which is 112 in excess of the number at the close of 1870. The additions made during the year consist of 18 lamp posts, and 89 wall brackets, and cost Rs. 1,177-11-4.

The average cost of lamp oil was Rupees 68 against Rupees 55-8-0 in 1870, and that of Kerosene oil Rupees 1-10-0 per gallon against Rupees 1-11-0.

The cost of each common oil Lamp with 3 wicks is Rupees 1-3-7 per month, and the Kerosene lights cost Rupees 1-5-4 each, inclusive of breakage of chimneys.

AVENUES.

By the following table will be seen the number of Plants existed out of these planted up to the end of last year and those planted during the year under review :—

Where planted.	Name of Avenue.	Remaining at the end of 1870 out of those planted prior to that period.	In 1871-72.	Description.	Remarks.
Mount Road, between Government House bridge and Wallajah bridge.	Napier avenue ...	180	85	Neem.	Replanted.
North-beach, from Parry & Co's. Office to the Fort.	Coleman avenue ...	......	...	Portia Cerbera Odollum.	Trees not having thrived this avenue was removed.
Wallajah esplanade road, between Wallajah bridge and St. Mary's bridge.	Victoria avenue ...	129	...	Mixed.	
Popham's Broadway and Monigar Choultry Road from St. Zavier's Parcherry to Tondiar Pettah.	Popham's Broadway avenue.	184	75	Mixed.	Extended.
The Island, East-end ...	Ladies' mile ...	832	...	Mixed.	The Casuarina trees were removed.
Mount Road from Government House bridge to Neill's Statue.	Mount road avenue.	218	40	Mixed.	
Pycroft's Road from Royapettah Police Court North Gate.	Pycroft's avenue ...	84	76	Mixed.	
Wallajah road from Round Tannah to Chepauk.	Alexandra avenue..	73	...	Neem.	
Bell's Road, west of Chepauk Palace Grounds.	Bell's avenue ...	45	..	Red-wood & Acacia.	
Binny's road from Neill's Statue to Commander-in-Chief's bridge.	Binny's avenue ...	39	...	Neem.	
Marshall's Road from Commander-in-Chief's bridge to Pantheon road junction.	Marshall's avenue...	74	...	Neem and Portia.	
Along the bank of the Cooum from Napier Park Gate west to Lawe's bridge.	Napier Park road avenue.	48	...	Portia and Neem.	A portion of these trees are now included in the Napier Park hence the increase 36 in 1870.

Where planted.	Name of Avenue.	Remaining at the end of 1870 out of those planted prior to that period.	In 1871-72.	Description.	Remarks.
Band practice ground from Wallajah bridge to Band-stand, South Beach.	South beach avenue.	64	13	Portia.	
General Patter's road, from Waller's stable to Madras Club.	The Club avenue ...	138	...	Red-wood & albizzia lebbek.	
Lang's garden road, from Friend-in-need Society's Work-shop to Marshall's road junction.	River side avenue...	331	20	Neem and Portia.	Extended.
Along the back of the People's Park (Sydenham's Road) from Colonel Lawe's bridge to DeMellow's road.	Sydenham's avenue.	31	...	Portia.	
From Mounted Police barracks to Munro's bridge.	Spur Tank avenue..	26	...	Neem.	
Along Pursewalkum High road Foot Paths.	Pursewalkum avenue	63	...	Neem.	
Popham's Esplanade road from China Bazaar road to Wallajah bridge.	Benfield avenue ...	72	...	Mixed.	
From Colonel Lawe's bridge west, to the Mount Road near Waller's stable.	River side avenue...	178	...	Portia.	
From the Commander-in-Chief's bridge to College bridge.	Commander-in-Chief's road avenue	100	12	Portia and Neem.	Extended.
From Hospital Gate to the Basin bridge.	Denison avenue ...	137	...	Do.	
Penitentiary road	Penitentiary avenue.	39	8	Do.	Extended.
Poonamallee road	Poonamallee road avenue.	......	26		Newly planted.
Cundappa Moodelly High road...	Cundappa avenue...	......	32	Neem.	Do.
Triplicane High Road, from Pycroft's road junction to Ice House road.	Triplicane avenue...	......	180	Cocoanut.	Do.
Whannel's road, from Poonamallee road to Pantheon road.	Whannel's avenue..	......	72	Peepul.	Do.
St. George's Cathedral road ...	Cathedral avenue...	......	39	Do.	Do.
	Total...	3,035	628		

People's Park.

The following is a Statement of Receipts and Disbursements by which it will be seen that the net expenditure for the year 1871, and to 31st March 1872, is Rupees 7,737-3-11.

Receipts.	Amount. Rs. A. P.	Disbursements.	Amount. Rs. A. P.
By proceeds of sale of Hay...	2,940 8 6	To Establishment	4,920 8 0
By sale of Rabbits, Pigeons, &c.	687 6 1	„ Feeding Bullocks	70 15 2
		„ Sundries...	211 9 1
By fees collected at the wild animal enclosure ...	2,107 7 0	„ Peons' Clothing	69 2 0
		„ Lighting	168 11 4
By Government grant by Zoological collection ...	3,960 0 0	„ Carts and Candles for Band ...	107 8 0
		„ Cutting and weeding grass ...	2,725 3 1
Amount paid from the Municipal Fund	7,737 3 11	„ Maintenance of the Zoological Collection and Establishment ...	4,346 13 4
			12,620 6 0
		Improvements.	
		Improving the Lion's shed ...	336 8 11
		Wooden Gates made	20 12 0
		Putting a tiled roof to Cheeta shed ...	339 7 7
		Roofing Tiger's shed	610 3 9
		Painting Band-stand	324 5 0
		Repairing the old Birds Cage and erecting a new one	145 3 4
		Superintendent's quarters repaired ...	115 1 8

Receipts.	Amount.	Disbursements.	Amount.
			Rs. A. P.
		Laying masonry bed for Velocipede stand	12 5 9
		Tell-tale machine	20 0 0
		Monkey posts and sheds erected ...	98 9 2
		Levelling the ground between nursery and well	229 8 0
		Wire-netting for Birds Cages ...	84 6 0
		Rabbit Cages supplied	51 0 0
		New Cattle shed	48 9 0
		Farm building repaired	45 4 0
		Wild animal shed enclosed with zinc sheets	305 9 7
		Rhinoceros fence	163 9 4
		Iron frame work for creepers ...	32 0 0
		Repairing animal shed with bamboos	162 11 0
		Bullock shed, teak and country wood planking fixed	67 5 6
		Serjeant's quarters repaired ...	129 10 9
		South Gate of the Park repaired,	29 4 0
		Boats, 2 new purchased and 1 old repaired	76 0 0
		Market repaired	156 14 4
		Railings and gates repaired ...	980 11 3
		Garden tools, &c., purchased ...	67 10 0
		Purchasing Mowing machine ...	125 9 7
		Sundry works	39 5 0
Total ...	17,432 9 6	Total ...	17,432 9 6

Napier Park.

Much has not been done to this Park, but the following are the expenses incurred :—

	Rs.	A.	P.
To Establishment	1,000	5	9
„ Feeding Bullocks	117	7	4
„ Sundries	36	12	10
„ Levelling, ground cutting and weeding grass	570	12	9
„ Tools	64	0	0
Excavating Tank (North-end)	212	8	11
Land purchased	1,500	0	0
Putting hedge and breaking down Store-room	6	14	2
Repairing and white-washing the Pilliar Pagoda	16	11	6
Extending the western gate and plastering	108	7	11
Plastering the cornice work to the Eastern Gate	88	6	4
Plastering the basement wall of the iron wire fencing near Government Bridge ...	154	8	8
Turfing tank and peninsula in the Band-stand	187	10	0
Constructing a masonry wall and putting up a Pecottah	7	5	9
Sinking a pot well	9	13	6
For filling and levelling the side of the roads	223	13	1
„ Excavating earth from Cooum river to level the ground near the east gate ...	300	12	5
„ Covering rubbish with Earth	7	4	11
„ Chunam shell supplied for erecting sewage lift	6	8	8
Total ...	4,620	4	5

Grazing and Avenue.

The income from the clippings of Trees and Grazing for the year 1871, and up to March 1872 amounts to Rupees 4,670-8 3 ; the extent of Esplanades available for grazing was 107 Cawnies, the amount comprises.

		Rs.	A.	P.
Clippings of trees	Rs.	751	9	7
Grazing Contract	„	2,628	0	0
Sale of Esplanade Hay	„	1,290	14	8

WIDENING AND IMPROVING STREETS.

A sum of Rupees 11,358-12-4 has been spent for the purchase of Land and Buildings, &c., on account of widening and improving of the following Streets :—

	Amount paid.			Amount recovered by sale of old materials.			Net Amount.		
Widening and improving Annapillay, Andeapa Naick, and Ramanen Streets, Black Town ...	3,627	3	8	1,288	7	6	2,338	12	2
Opening out Venoyaga Maistry Lane to Mint Street, Black Town	850	0	0	....			850	0	0
Widening Kistnuppa Maistry Street, Black Town, Yadapolliem	1,104	2	4	2	2	6	1,101	15	10
Widening a portion of Semboodoss Street, Black Town	446	2	9	....			446	2	9
Opening out Naval Hospital Road, Pereamettoo...	1,082	10	3	....			1,082	10	3
Opening out Peddoo Naick's Street, Black Town.	365	5	1	....			365	5	1
Widening Vepery High Road	60	0	0	....			60	0	0
Extending Perambore Barracks Road through Doveton College Compound	1,621	4	6	....			1,621	4	6
Connecting Egmore High Road with Police Commissioner's Office Road	562	9	4	....			562	9	4
Widening Mannick Maistry Street, Triplicane ...	290	12	0	*135	11	5	155	0	7
Widening Vadagherry Maistry Street, Chintadrepettah	58	6	3	....			58	6	3
Widening Pycroft's Road, Triplicane	77	4	3	....			77	4	3
Opening out new roads through Boatmen's huts, Royapoorum	1,212	15	11	440	14	1	772	1	10
Total...	11,358	12	4	1,867	8	6	9,491	8	10

* N. B.—This amount, Rupees 135-11-5, was refunded out of money received for payment which was witheld.

MONEYS COLLECTED DURING THE YEAR.

The undermentioned sums being proceeds of various sales of old materials, &c., were paid to the Municipal Collector during the year, the total being Rupees 10,994-9-3 :—

By proceeds of sale or surplus land and old materials of house purchased for widening Andeapa Naick, &c., Streets, Black Town	Rs.	1,288	7	6
Do. of old materials of a house purchased for widening Pursewalkum High Road	„	26	10	6
Do. of old materials of a Toddy shop purchased for a Fountain on Pursewalkum High Road	„	16	4	0
Do. of houses purchased for clearing Boatmen's huts, at Royapoorum ...	„	187	11	5
By sale proceeds of Esplanade Hay	„	1,290	14	8
By amount realised for damage done to the Esplanade...	„	815	7	9
By proceeds of sale of hay from Napier Park	„	637	9	2
„ of surplus Palmyrahs purchased for fencing the banks of Cooum	„	135	12	5
„ of sewage farm in DeMellow's Road	„	173	5	9
„ Cart-stand in Kissampettah	„	5	0	0
„ Clippings of avenue	„	751	9	7
By amount realised for the erection of wall to the market in Naval Hospital Road	„	174	4	2
„ amount paid by Miss Mandaville for a portion of land at the entrance of her compound in Hall's Road to be taken on lease	„	10	[illegible]	0
By proceeds of sale of Palmyrah's and trees and by contract of cocoanut tops at the Spur Tank, on account of Water Works	„	152	1	0
By amount realized from individuals for the breakage of glass panes, &c., of the public lights	„	20	1	9
By Municipal bullocks for work done for private individuals	„	84	0	0
By People's Park sale of hay...	„	2,940	8	6
„ Tiger collection	„	2,097	7	0
Miscellaneous	„	687	6	1

APPENDIX G.

From STANDISH LEE, Executive Engineer, to the Officiating President, Municipal Commission.

I have the honour to submit this, my fifth Annual Report, on the works executed and general business transacted in this Department, during the year 1871-72, prepared for the purpose of meeting the requirements of the XXXII. Section of "The Madras Municipal Act of 1867."

WATER SUPPLY.

DELIVERY CHANNEL.

The whole of the works comprehended under this head, excepting the Water Tower at the Red-Hills' storage reservoir, and puddling of that section of the channel lying between Madras and the Railway crossing (a distance of nearly 4 miles), have been completed and in full operation for some months. Water was first admitted into the whole length of the channel on the 31st October 1871. The embankment has withstood the brunt of two monsoons, and beyond a few unimportant slips in the 6th and 7th miles, no damage has been done.

The works executed consist of—

EARTH-WORK.

In 1st mile, 10 feet of cutting through gravel.
„ 2nd „ partly 5 feet of cutting through gravel, and partly 5 feet of embankments.
„ 3rd „ 5½ feet of embankments.
„ 4th „ 7¼ do. do.
„ 5th „ 10½ do. do.
„ 6th „ 14 do. do.
„ 7th „ 18 do. do.

MASONRY WORKS.

1 Large masonry terminal shaft with spill-water, self-acting flood gates and Penstock, at Madras.
7 Over bridges.
2 Under bridges.
2 Aqueducts of 5 vents each.
3 do. of 3 do.
15 Irrigation and drainage tunnels.
6 Wooden foot bridges.
8 do. for walkmen.
3 Tumbling bays with flood gates.
3 Small bungalows for 6 European walkmen.

PUDDLING AND GRAVELLING.

2nd mile }
3rd do. } Sole and inner slopes of channel.
4th do. }

The total cost up to the year ending 31st March 1871-72 was Rs. 1,60,968-9-10.

DISTRIBUTION WORKS.

These consist of -
One Trunk main.
Four mains.
One hundred and ninety sub-mains and branches and 137 fountains.

TRUNK MAIN.

This main is 42 inches in diameter and starts from the masonry shaft at Modumbaukum, with a bell-shape mouth-piece (protected with wire netting) it dips under the Otary nullah and rises by a uniform gradient of 1 in 600 until it reaches the Gengadraeeswarer Covil Tank, a distance of 4,456 feet. At this point No. 1 Main branches off, and the trunk is reduced to 36 inches (for a length of 3,702 feet) up to the Poonamallee road, where No. 2 Main starts. From this to No. 3 Main, at the crossing of the Pantheon road and Police Commissioner's Office road, the trunk main measures 1,236 feet, and is 30 inches in diameter. It then reduces to 18 inches for a distance of 3,386 feet and merges into No. 4 Main after crossing the Commander-in-Chief's bridge. The total length of this main is 2·42 miles.

No. 1 MAIN.

Is for the supply of the villages of Pursewalkum, Perambore, Vepery, Choolay, and Peddoo Naick's Pettah in the 2nd and 5th Municipal Divisions. In length it is 2·75 miles and reduces gradually from 27 inches in diameter to 12 inches, in the following order :—

27 inches from starting point to Choolay Bazaar Road	4,569 feet.
24 inches from Choolay Bazaar Road to People's Park, over Elephant Gate Bridge, and along Ramanen and Andiapen Naick Streets, to Mint Street	4,839 do.
21 inches from Andeappah Naick Street and Mint Street crossing, along Mint Street, north, up to Taudamooteapen Street	900 do.
16 inches from termination of 21 inch main to Theroopilly Street	563 do.
14 inches from termination of 16 inch Main along Mint Street to Ummen Pagoda Street, and then along Ummen Pagoda and Portuguese Church Streets up to Odacall Street	2,970 do.
12 inches from Ummen Pagoda Street to Pedare Pagoda Street	669 do.
Total length ...	2·75 miles.

No. 2 MAIN.

This is for the supply of a portion of the Poonamallee Road, Vepery, New-Town, and Mootealpettah, and comprises a portion of the 5th, and the whole of the 3rd Municipal Divisions. It consists of—

22-inch pipes from starting point on the Poonamallee road, along the Poonamallee road to west river side road ... ... 3,585 feet.
21-inch pipes from west river side road over General Hospital bridge up to Benfield Esplanade road ... ... 4,818 „
20-inch pipes from Benfield Esplanade road, along Popham's Esplanade road, China bazaar Esplanade road east, to Thumboo Chetty street ... ... 3,720 „
18-inch pipes along Thumboo Chetty street to Cuttchaleeswaran Agrarum street ... ... 1,590 „
16-inch pipes from termination of 18 inch diameter, along Thumboo Chetty street ... ... 208 „
15-inch pipes from the above point to a distance of ... ... 209 „
14-inch pipes from the termination of 15 inch diameter, along Munnady street, Unkappa Naick street, Naraina Naick street to Jafferserong street crossing. 1,350 „
12-inch pipes from Jafferserong street along Naraina Naick street to Beach ... 579 „

Total length.... 3 miles.

No. 3 Main

Branches off at the crossing of the Pantheon and Police Commissioner's Office roads, and consists of :—

30-inch pipes up to the Valve House in Harris' road for a distance of ... ... 1,240 feet.
27-inch pipes from this point, over Harris' bridge along Blacker's road, Wallajah road, and Triplicane high road to Vallaboo Agrarum street ... ... 6,038 „
24-inch pipes from Vallaboo Agrarum street crossing, along Triplicane high road up to Pycroft's road ... ... 909 „
14-inch pipes along Triplicane high road to Ice-house road ... ... 2,196 „
12-inch pipes from Ice-house road, along Barber's bridge road to Cornaceswarer Covil street ... ... 5,205 „

Total distance... 2·95 miles.

No. 4 Main

Is a prolongation of the Trunk Main after crossing the Commander-in-Chief's bridge, and is for the supply of Royapettah. It consists of:—

18-inch pipes from the Commander-in Chief's bridge along Binny's road, and across the Mount road, north of Neill's Statue... ... ... 1,284 feet.
15-inch pipes from Mount road, along Wood's road to Pycroft's road ... ... 2,028 „
14-inch pipes from Pycroft's road along Westcott's road, to Peter's road ... 1,716 „

Total distance... ·95 miles.

The whole of these mains are provided with man-holes for the examination of the interior of the pipes and the detection of any obstruction. They are spaced at a distance of 200 yards apart throughout. Each man-hole is built up with brick-work to within a foot of the surface, and covered over with granite slabs.

I have described minutely the course of the principal water-mains, with the view of supplying each Commissioner with information which he could readily refer to on any representation from the rate-payers for extension or otherwise of the Water-Supply Works; and with the same object I shall in an Appendix, give a list of all the streets under which the smaller pipes are carried.

The first pipe was laid in the presence of Mr. Loch, the then Officiating President of the Municipality, on the morning of the 13th August 1871, and the pipe-laying work done during the year is contrasted in the following abstract with the estimated lengths :—

——	Estimated lengths in feet.	Length laid and jointed in feet.
Trunk Main ...	12,780	12,154
No. 1 „ ...	14,510	7,580
„ 2 „ ...	16,059	10,804
„ 3 „ ...	15,588	8,170
„ 4 „ ...	5,028	3,606
Total ...	63,965	42,314

Sub-mains and Branches.

Of 190 Sub-mains and Branches measuring 25 miles, 21 were laid during the year, making an aggregate length of 10 miles.

Sluice Cocks.

The following were fixed :—

On Trunk Main.

1—42-inch double-faced sluice cock at the starting point of the Trunk Main from the masonry shaft.
1—36 „ do. at the south-east corner of Gungadraceswarer Covil tank, Pursewaukum.

1—30-inch	double-faced sluice cock	at the south end of Male Asylum compound, Egmore.	
1—18	,,	do.	at the north end of Marshall's road.

No. 1 Main.

1—27	,,	do.	at the starting point near the Gungadraeeswarer Covil tank on the Pursewaukum high road.
1—27	,,	do.	in Choolay bazaar road.
1—24	,,	do.	in People's Park, north end.
1—21	,,	do.	in Mint street, North Black Town.
1—16	,,	do.	do. do.
1—14	,,	do.	in Ummen Pagoda street, Black Town.
1—12	,,	do.	in Portuguese Church street do.

No. 2 Main.

1—22	,,	do.	in Poonamallee road on the north of Male Asylum.
1—22	,,	do.	in Poonamallee road at the junction of west river side road.
1—21	,,	do.	at the commencement of Benfield Esplanade road.
1—20	,,	do.	in Thumboo Chetty street, Black Town.

No. 3 Main.

1—27	,,	do.	in Harris' road near the old Presidency College.
1—27	,,	do.	in Wallajah road near Round Tannah.
1—24	,,	do.	in Triplicane high road near Nabob's Palace.
1—14	,,	do.	do. near the crossing of Pycroft's road.
1—12	,,	do.	in Barber's bridge road near Elephant tank.

No. 4 Main.

1—15	,,	do.	at the commencement of Wood's road.
1—14	,,	do.	in Westcott's road near the Police Tannah.
21		do.	of sizes on Sub-Mains and Branches.

The principal items of work in connexion with the above are :—

Earth-work.

			RS.	A.	P.
In depth up to 6 feet	723,715 c.ft. @ 13-10-0 ℔ 1,000 c.ft.	...	9,860	9	10
Above 6 feet	1,148,776 ,, @ 20- 0-0 ℔ 1,000 ,,	...	22,975	8	3
17,045 c.ft. of concrete work / 1,009 ,, brick-work	Departmentally executed. ...	...	7,223	5	8

Masonry Fountains.

Only a few of these were constructed, as it was necessary that some experience should be gained in their working before they were introduced extensively; the taps used throughout are known as Kennedy's patent self-acting taps, and they have throughout given every satisfaction. Being self-closing, they act as waste-water preventers, and the mechanical arrangement is so difficult to derange that they have hitherto successfully withstood every conceivable bad usage. The water-supply works being a novelty, the curiosity of young and old has alike been excited, and while it is amusing to see old age examining, with wondering eye, the flow of water from the fountain taps, it is a serious business to contend against the ingenuity of youth, when the impulse is dictated by mischief. I am, however, happy to be able to report that the experience gained is decidedly in favour of Kennedy's taps, and though a few of them have been slightly out of order, the cause has been traced and easily rectified. The delivery pipe is of brass, and though scarcely half an inch of it is seen through the orifice in the face plate, it seems to have excited the cupidity of some, as in every instance where a tap has been damaged, it has been found, on examination, to be caused by force being applied to this pipe, with the object of stealing it.

Particular care was taken in the instructions sent to the manufacturers to specify that all exposed surfaces should be of iron, and so contrived, as not to expose to sight the mode of attachment. The latter has been strictly carried out, and the only exception to the former condition has been the slightest exposure of yellow metal through the face plates.

The masonry fountains commenced during the year are :—

1. Kelly's road.	Rs.	497	3	7
2. Opposite Doveton College	,,	336	8	8
3. Perambore Barracks road near Pilliar Pagoda	,,	220	10	5
4. Pathalaponniummen Covil road	,,	187	1	6

Twelve 4-tap Glenfield & Co.'s waste water preventers were imported, and fixed as under :—

1. Gramum Parcherry, Pursewaukum.
2. Gungadraeeswarer Covil tank bund, Pursewaukum.
3. Cundappah Moodelly high road, do.
4. Poodoo street, Choolay.
5. Astaboojum road, Choolay
6. Vejiavenoyager Covil street, Choolay
7. Maddox street, Vepery.
8. Poonamallee road, Pereamettoo.
9. Near Police station opposite Patcheappah's Hall.
10. Harris' road, Comaleswaram Pettah.
11. Jummna Musjid, Triplicane.
12. Cornaeeswara Covil road, Mylapore.

Twelve combined cast iron lamp and pillar water posts, with self-closing valves for drawing water in streets, were imported and fixed in the following streets :—

1. Kilpauk garden road, at junction of Kelly's and Orme's roads, Kilpauk.
2. Venithitha Moodelly street, Pursewaukum.
3. Pursanavenoyager street, do.
4. Hunter's road at junction of General Collins' and Rundall's roads, Vepery.
5. Sydenham's road, Pareamettoo.
6. Poonamallee road, opposite Scotch Kirk, Vepery.
7. Triplicane high road, at crossing of Pycroft's road, Triplicane.
8. Egmore high road, at the commencement of Hall's road, Egmore.
9. Opposite Government house, west gate Mount road.
10. At the junction of Monteith road and Marshall's road, Egmore.
11. On the side of Tannah near Neill's Statue, Mount road.
12. Royapettah bazaar road, Royapettah.

The total expenditure up to 31st March 1872 is noted below, but this not only includes Engineering and other expenses connected with the testing and passing of the pipes, &c., in England, together with the actual supervision of the works here, but also the cost of the preparation of the scheme :—

	RS.	A.	P.
Sundries and superintendence, inclusive of expenditure for preparation of Distribution Scheme	40,144	8	4
Fountains	11,088	6	5
Delivery Channel	1,59,922	15	11
Do. Earth-work labour	565	12	2
Do. New roads	474	13	9
Repairing Tanks	3,548	1	6
Cast Iron Pipes...	7,47,467	5	7
Office Laying Pipes	7,223	5	3
Excavation and laying pipes by Mr. R. Woolley	81,893	1	0
Charges paid to Mr. May, C. E., in England for passing pipes, &c. ...	6,020	3	6
Messrs. K. S. King & Co. advance to meet contingent expenses in England.	3,229	14	10
	10,61,578	8	3
Deduct the Government contribution for the Delivery Channel	30,832	0	0
Net Rupees...	10,30,746	8	3

Contrasting the expenditure with the items in the estimate, the results are as follow :—

ESTIMATE.

	RS.	A.	P.	RS.	A.	P.
Value of Cast Iron Pipes...	7,12,650	0	0			
Sluice Cocks, Valves, &c...	6,310	0	0			
Minor Branches ...	41,192	0	0			
				7,60,152	0	0
Earth-work for excavating and refilling...				26,250	0	0
Laying and jointing the Trunk Mains and Sub-Mains	97,216	0	0			
Do. Minor Branches...	68,140	0	0			
				1,65,356	0	0
Carrying the Mains across the rivers ...				400	0	0
Brick-work for waste drains				2,786	0	0
Tanks (repairs)				9,000	0	0
Fountains				68,500	0	0
Sundries				1,03,356	0	0
Delivery Channel... ...	1,75,032	0	0			
Deduct Government Contribution	30,832	0	0			
				1,44,200	0	0
Total...				12,80,000	0	0
Items not provided for in Estimate ...				32,337	6	11
Grand Total...				13,12,337	6	11

EXPENDITURE.

	RS.	A.	P.	RS.	A.	P.
Value of Cast Iron Pipes, Sluice Cocks, minor branches, &c.				7,44,957	7	9
Earth-work for excavating and refilling ...				28,499	4	7
Laying and jointing the Trunk Mains, Sub-mains, and minor branches ...	52,887	15	5			
Masonry works executed departmentally in connection with the above ...	7,223	5	3			
				60,111	4	8
Carrying the Mains across the rivers ...				...	...	...
Brick-work for waste drains				...	...	...
Tank (repairs)				3,548	1	6
Fountains ... { Masonry works ...	11,088	6	5			
Fountains ... { C. I. Fountains ...	2,509	13	10			
				13,598	4	3
Sundries and Superintendence				18,912	11	8
Delivery Channel	1,59,613	14	11			
Deduct Government Contribution	30,832	0	0			
				1,28,781	14	11
				9,98,409	1	4
Balance of Estimate in hand ...				2,81,590	14	8
Total...				12,80,000	0	0
Preparation of Scheme ...	2,177	8	6			
Officers' Salary & Estt. ...	19,054	4	2			
Establishment for the maintenance of Delivery Channel ...	565	12	2			
Agent's expenses in England for testing and passing of material and plant and incidental expenses..	9,250	2	4			
Roads made to replace those closed by the Water Works	474	13	9			
Compensation for Lands ...	814	14	0			
				32,337	6	11
Grand Total...				13,12,337	6	11

The excellent arrangements made by the Contractor, for the manufacture and shipment of the material and plant, worked most satisfactorily, and to this must be ascribed principally the rapid progress of the pipe-laying works during the year. With one exception, that of the *Jane Leech* which foundered at sea, no disaster of any importance occurred, although 25 vessels were employed in the transport of the materials. The advance made to the Contractor on the Cargo of the *Jane Leech* was Rupees 67,358-6-2, and of this amount £6,657-10-0 was at once recovered from the underwriters and paid into the Head Office of the Agra Bank, London, to the credit of the Commissioner's Agent (Colonel Denison) in England, from which payments were made as fresh pipes were manufactured and shipped in replacement of those lost. At the end of the year there was only a small balance remaining to be imported, which consisted of pipes of small bore, and which were principally a supplementary order.

Doubts having been expressed as to the universal use of the Red-Hills water, I would here quote from the Calcutta Report to show how soon prejudices disappear. The works were handed over in the early part of 1870, and the Municipal Commissioner in his report for that year states :—" It was urged against the Water Supply Scheme, that orthodox Hindoos would not make use of the water delivered through iron pipes, however, these anticipations have not been realized, and caste prejudices against the water if they ever really existed, have altogether disappeared, and now all classes of natives freely make use of the water, and frankly admit the boon conferred on them by the completion of the works." I would relate our own experiences, but it would refer to a period more recent than this report. I might, however, state that wherever the Red-Hills water has been delivered, it has been most acceptable to all classes of the community, and people often go a mile and more to fetch it.

There has also been some anxiety expressed, as to the sufficiency of the water stored at the Red-Hills and Cholaveram reservoirs for all the purposes contemplated by Government and the Commissioners. After studying the subject for five years, I am of decided opinion, that the supply will not only be ample but there will be much to spare. In support of this view I produce the following evidence—

Statement shewing height of water in the storage reservoirs, the feeding Channels, and the source of supply for each week, during the year 1871-72.

Month and Date.		Head sluice Cortelliar at sill.	Upper supply Channel.	Cholaveram tank + above—below old calingular crest.	Head sluice at channel between lakes at sill.	Red-Hill tank + above—below old calingular crest.	Channel between Lakes.	Quantity of water in cubic yards.		Remarks.
								Cholaveram.	Red-Hills.	
1871.								Millions.	Millions.	
April ...	3rd ...	·16	...	— 1·49	...	+ ·92	3·45	1·3	23·7	
	10th ...	...	...	— 1·80	...	+ ·60	3·14	...	...	
						— ·00	...	...	20·5	
	17th ...	...	...	— 2·18	...	— ·08	2·76	...	...	
	24th ...	...	...	— 2·56	...	— ·92	2·38	...	...	
May ...	1st ...			— 2·69		— 1·82	2·25	...	...	
		...	...	— 3·00	...	...	...	1·0	...	
	8th ...	...	...	— 3·02	...	— 2·92	1·92	...	...	
						— 3·00	...	...	11·9	
	15th ...	...	...	— 3·26	...	— 4·00	1·68	...	...	
	22nd ...	...	...	— 3·40	1·54	— 5·10	...	...	...	
	29th ...	...	...	— 3·59	...	— 5·50	1·35	...	...	
						— 6·00	...	...	5·3	
June ...	5th ...	...	...	— 3·84	...	— 6·08	1·10	...	...	
	12th ...	...	...	— 4·00	...	— 6·54	0·94	...	...	
	19th ...	...	...	— 4·14	...	— 7·50	0 80	...	...	
	26th ...	...	...	— 4·30	...	— 8·17	0·64	...	...	
July ...	3rd ...	...	...	— 4·46	...	— 8·30	0·48	...	...	
	10th ...	...	...	— 4·62	...	— 8·75	0·32	...	...	
	17th ...	4·00	2 00	— 3·57	...	— 8 45	1·37	...	...	
	24th ...	·82	0·08	— 3·60	...	— 8·75	1·34	...	...	
				— 3·00	...	...	...	1·0	...	
	31st ...	·83	·58	— 3·14	...	— 8·87	1·30	...	...	
						— 9 00	...	...	1·0	
August ...	7th ...	·87	1·00	— 2·90	...	— 9·12	2·04	...	...	
	14th ...	·82	·75	— 2·83	...	— 9·20	2·12	...	...	
	21st ...	6·50	6·00	— 1·84	...	— 9·37	...	...	...	
				— 0·00	...	...	...	3·4	20·5	
	28th ...	1·50	2·00	+ 1·75	3·10	— 9·75	...	...	...	
September ...	4th ...	1·13	1·34	+ 2·15	3·50	— 9·98	...	...	...	
	11th ...	1·25	1·42	+ 0·90	2·25	— 8·13	...	...	...	
	18th ...	1·30	3·00	+ 0·30	1·65	— 6·62	...	...	...	
	25th ...	1·25	1·16	+ 1·15	2·50	— 5·37	2·25	...	...	
				+ 3·00	...	...	...	6·6	31·6	
October ...	2nd ...	9·60	6·00	+ 4·10	5·45	— 3·83	4·00	...	...	
						— 0·0	...	...	20·5	
	9th ...	5·70	6·00	+ 6·90	3·25	— ·70	5·00	...	...	
	16th ...	2·10	2·08	+ 4·50	5·85	+ 1·58	4·00	...	...	
						+ 3·0	...	...	31·6	
	23rd ...	3·77	4·00	+ 4·00	5·35	+ 3·58	3·70	...	...	
						+ 4·50	...	...	33·5	Municipal
	30th ...	1·80	1·75	+ 2·40	3·75	+ 4·75	2·75	4·0	40·0	sluice valve
						+ 6·00	...	...	45·4	opened this day.

Continuation of Statement shewing height of water in the storage reservoirs, the feeding Channels, and the sources of supply, for each week, during the year 1871-72.

Month and Date.		Head sluice Cortelliar at sill.	Upper supply Channel.	Cholaveram tank + above—below old calingular crest.	Head sluice at channel between lakes at sill.	Red-Hill tank + above—below old calingular crest.	Channel between Lakes.	Quantity of water in cubic yards.		Remarks.
								Cholaveram.	Red-Hills.	
1871.								Millions.	Millions.	
November ...	6th ...	4·40	5·58	+ 6·00	7·35	+ 7·25	4·90	10·7	...	
						+ 9·00	...	...	61·8	
	13th ...	7·25	4·00	+ 9·30	10·65	+ 11·08	...	...	...	
	20th ...	6·30	2 00	+ 9 20	10·55	+ 11 12	0·56	...	...	
	27th ...	8·05	8·00	+ 10 30	11·65	+ 11·25	0·75	...	...	
						+ 12·00	...	15·7	80·5	
December ...	4th ...	2·32	1·00	+ 9·00	10·35	+ 10·10	0·50	...	...	
	11th ...	2·75	2·65	+ 8·80	10·15	+ 9·93	0·50	...	...	
	18th ...	1 80	1·75	+ 10·60	11·95	+ 9·93	0·50	...	...	
	25th ...	1·20	1·00	+ 9 85	11·20	+ 9·75	0·50	...	...	
January ...	1st ...	1·04	1·00	+ 9·70	11·05	+ 9·60	0·50	...	...	
	8th ...	0·88	0·98	+ 9·60	10·95	+ 9·34	0·50	...	...	
	15th ...	0·80	0·87	+ 9·45	10 80	+ 9·14	0·50	...	...	
	22nd ...	0·75	0·78	+ 9·25	10 60	+ 9·02	0·50	...	...	
						+ 9·00	...	...	61·8	
	29th ...	0·72	0·56	+ 9·00	10·35	+ 8·88	0·50	15·7	...	
February ...	5th ...	0·52	0·47	+ 8 85	10·20	+ 8·70	0·50	...	...	
	12th ...	0·52	0·43	+ 8·75	10·10	+ 8·42	0 50	...	...	
	19th ...	0·51	0·38	+ 8·60	9 95	+ 8·20	0 50	...	...	
	26th ...	0·65	0·28	+ 8·35	9·70	+ 7·95	0·50	...	...	
March ...	4th ...	0·95	0·24	+ 7·95	9·30	+ 7·84	0·50	...	...	
	11th ...	0·90	0·80	+ 7·60	8·95	+ 7·74	0·50	...	...	
	18th ...	0·89	0·80	+ 7·30	8·65	+ 7·35	0·50	...	...	
	25th	0·85	0·78	+ 7·00	8·35	+ 7·20	0·50	12·0	50·0	

It will be observed that on the first day of the official year the two tanks contained in the aggregate 25 millions of cubic yards, and notwithstanding irrigation, evaporation and soakage, the supply available on the 31st October (the day on which water was admitted into the Delivery Channel) was 44 millions of cubic yards. At the end of the official year under review, the quantity stored up was 62 millions of cubic yards.

I must draw attention to the fact that the height of water retained in each of the reservoirs, was only 10·6 feet and 11·25 feet, against a maximum of 18 and 15 feet respectively; and that the floods in the Cortelliar for the weeks ending 17th July, and 20th November, were not allowed to enter the feeding channel, owing to the progress of certain works, which are now finished.

It is proposed to fill the tanks this year to the height of 46·31 feet and 61·68 feet above mean sea level respectively, representing in the aggregate 138 millions of cubic yards, to which must be added the probable flood water before the north-east monsoon, and which when taken at the low figure shewing the results of 1871-72, when several freshes in the river were not utilized, gives 43 millions of cubic yards, or in all a total of 180 millions.

The expenditure from which will be :—
40 millions C. yds. for irrigation.
32 do. for the Municipality.
30 do. for probable extensions.
78 do. Surplus.

In the above estimates I have not made a separate allowance for evaporation and soakage, as it was not necessary in consequence of the expenditure being taken at the actual results of the previous year, and not deduced from any calculation. There has been considerable discussion among the Government officials on these two sources of loss, and while several Engineer officers are of opinion that they should form a set off against any estimate of the quantity of water that will be available, I am, myself, inclined to agree with the able Engineer (Mr. William Fraser, C. E.) who prepared the scheme, when he states in alluding the flow of spring water in the feeding channels for the greater part of the year, and the loss from evaporation, "I am disposed to let one stand against the other" and in confirmation of this opinion I might mention that throughout the year under review, the water running down the upper channel into the Cholaveram tank was on an average 9 inches deep, and the lower one into the Red-Hills tank, 6 inches. The bottom breadth of these channels is 30 feet each.

Mode of drawing off the supply and distributing it.

I think it necessary to give a concise description of the "modus operandi," here, as much misapprehension prevails on the subject.

The maximum height of water in the Red-Hills reservoir is 15 feet above our tapping point, and as it was found from experience at Bombay and other places, that water when drawn from the bottom

of a tank, where it is in contact with the earth, and has no opportunity of being acted on by the atmosphere, smells and tastes bad, provision has been made in the head works of the Municipality to draw off the supply for Madras from the surface of the water. This is effected by four apertures in the water tower, 27 inches in diameter, and 1 foot 9 inches above each other, so that at no time can the water be drawn off at a greater depth from the surface than 1¾ feet or 21 inches. The point of drawing must always be a little below the surface of the water for the purpose of preventing the admission of weeds and other foreign substances into the Delivery Channel.

The water, on issuing from the apertures in the tower, will fall over a few steps and collect in a basin, the southern boundary of which is composed of two concentric walls 6 feet apart and perforated throughout with 4½ inch holes. The space between them will be packed with filtering material, through which the water will have to strain before entering the delivery channel. Pouring the water from a height is to ærate it, and straining it is an additional security against the admission of decaying vegetation.

The channel is nearly 7 miles in length and passes through an open part of the country very thinly populated, so that there is no fear of the water deteriorating from the absorption of foul gases. On arriving at the Madras terminus, it passes through twelve copper wire gauze strainers, 60 mesh to an inch, before entering the masonry shaft, from which latter it flows into the Trunk Main, and is not exposed to light and air until it is drawn from the fountain taps.

The fountains consist of covered masonry cisterns containing about a day's supply for the people in their neighbourhood, and are supplied with several taps each, ranging from 4 to 14. Each cistern fountain has for the present one tap so arranged, that the water issuing from it must infiltrate through certain filtering material contained between two slabs of Ransome's patent stone. The material to be used has not yet been decided, pending a series of experiments about to be instituted.

In localities that are thinly populated, cast iron fountains of special designs are to be employed, these are also to deliver filtered water. The system pursued with reference to filtration is different from any Water Works that I am acquainted with. The usual practice in England is to filter the whole of the water before admitting it into the pipes ; but a moment's reflection, would show how expensive this system is with reference to the object to be gained. Filtration is resorted to, for the purpose of securing a pure supply for actual consumption, but for every 20 or 25 gallons per head supplied by Water Works, 99 per cent. of it is used for watering roads, flushing drains, supplying baths and other ornamental or mechanical purposes, and therefore it follows that 100 gallons are purified for securing one gallon of wholesome water for drinking. By the arrangement proposed by me only such portion of the supply as is required for consumption will be filtered and thereby the cost reduced to a minimum.

GENERAL REMARKS.

A comparison between the Water Works of Bombay and Calcutta, with that of Madras, would enable the public easily to arrive at a correct estimate of our works, and to allow of this being readily done, I place the following items opposite each other in a tabular form.

....	Bombay.	Calcutta.	Madras.	Remarks.
Cost of Water Supply Works ...	72,00,000	65,16,000	13,00,000	
Cost of raising the Water (Annual)	By gravitation.	86,000	By gravitation.	
Maximum head of Water ...	*	50 feet.	30 feet.	
Quantity delivered per head of population	12 Gallons.	15·6	40 gallons.	
Dip-wells	48	0	0	These are condemned in present practice, and therefore none will be used.
Fountains	66	*	137	
Stand pipes	34	470	24	These are principally combined with lamp posts.
Tanks for bathing	*	22	36	
Price at which water is sold per 1,000 Gallons	1 Rupee.	8 Annas.	2 Annas.	

* These are left blank, as they could not be traced at in the Annual Report.

List showing the Streets in which Sub-mains and branches are laid.

Adam's Street, Mylapore.
Andeappen Street, Black Town.
Anderson's Street, Black Town.
Annapillay Street, Black Town.
Armenian Street, Black Town.
Anoomundaroy Pagoda Street, Black Town.
Aroonachella Naick Street, Chintadrepettah.
Aroobaloo Chetty Street, Black Town.
Astaboojum Road, Choolay.
Avadanumpapier Road, Choolay.

Balfour's Road, Kilpaukum.
Balakistna Pillay Street, Chintadrepettah.
Black Town Church Street, Black Town.

Cantoor Sadiapen Street, Pareametton.
Casavaperoomall Street, Mylapore.
Caulapa Ansary Street, Black Town.
Chellapilliar Covil Street, Triplicane.
Corneeswarer Covil Street, Mylapore.
Cutchaleeswarer Agrarum Street, Black Town.
Cooppier Street, Black Town.
Cundasawmy Covil Street, Cosapettah.
Cundapah Moodelly High Road, Pursewaukum.

Davaroya Moodelly Street, Triplicane.
Davidson's Street, Black Town.

Egmore High Road, Egmore.

Gengadara Eeswarer Covil Road, Pursewaukum.
General Collin's Road, Vepery.
Govindapa Naick Street, Black Town.

Harley's Road, Kilpaukum.

Ice House Road, Triplicane.
Iyapoo Chetty Street, Black Town.
Iyah Moodelly Street, Chintadrepettah.

Janay Jahan Khan Road, Triplicane.
Jones' Street, Black Town.

Kabaleeswarer Covil Street, Mylapore.
Kilpauk Garden Road, Kilpaukum.
Kistnama Naick Agrarum Street, Black Town.

Maliapen Street, Black Town.
Male Asylum Road, Egmore.
Moocur Nullamoothoo Chetty Street, Black Town.
Moocheeroonnesabagum Street, Triplicane.
Mount Road, Triplicane.
Munnady Street, Black Town.
Mundavally Street, Black Town.

Naneapa Naick Street, Black Town.
Narasingaperoomall Street, Chintadrepettah.
Nagapier Street, Triplicane.
Nanispa Naick Street, Chintadrepettah.
Naroyna Naick Street, Comaleeswaren Covil.
Naval Hospital Road, Vepery.
North-beach Road, Black Town.
Naroyna Naick Street, Black Town.

Odacal Street, Black Town.

Pantheon Road, Egmore.
Popham's Broadway, Black Town.
Padaury Pagoda Street, Black Town.
Peroomall Chetty Street, Black Town.
Peddoo Naick do. do.
People's Park, North Choolay.
Perambore Barrack's Road, Perambore.
Poodoo Street, Cosapettah.
Padavetty Ummen Covil Street, Cosapettah.
Prasunnavenoyager Covil Street, Pursewaukum.
Pycroft's Road, Triplicane.

Rasapa Chetty Street, Black Town.
Ramasawmy Street, Black Town.
Ramasawmy Maistry Street, Triplicane.
Ramanja Iyer Street, Black Town.
Royapettah High Road, Royapettah.
Royapettah Bazaar Road, Royapettah.
Rotter's Lane, Vepery.
Rundall's Road, do.

Salay Street, Vepery.
Sawmy Naick Street, Chintadrepettah.
Saulavenoyager Street, Black Town.
Seven Well's do. do.
Singaperoomall do., Triplicane.
Sinkaracharriar Street, Triplicane.
Soonkoovar do., do.
Soondaravenoyager Street, do.
Stringer's Street, Black Town.
Strotten Moothea Moodelly Street, Black Town.
Sultan's Street, Black Town.
Sydenham's Road, Pareamettoo.

Tanda Mooteapen Street, Black Town.
Tharady Street, Triplicane.
Theetharapah Moodelly Street, Triplicane.
Theroopully Street, Black Town.
Teeroovateeswarerpettah Street, Triplicane.
Trevelyan Water Works do., Black Town.
Tholasingaperoomall Street, Triplicane.
Tottecala Comarapa Moodelly Street, Choolay.
Thyapoo Moodelly's Street, Black Town.
Tucker's Lane, Black Town.

Ummenpagoda Street, Black Town.
Unkapa Naick do., do.

Veneitheertha Moodelly Street, Choolay.
Venkatasabathan Street, Choolay.
Venkatachella Moodelly Street, Choolay.
Vepery High Road, Vepery.
Veeraragava Moodelly Street, North Triplicane.
Veeraragava Moodelly do., South do.
Vejayavenoyagar Covil Road, Choolay.
Venkatasa Naick Street, Triplicane.
Vurdah Mootheapen Street, Black Town.

Wallajah Road, Triplicane.

Yagambareeswarer Covil Street, Black Town.

From W. DONALD, Esq., Auditor of the Madras Municipal Accounts for the official year 1871-72, to the Hon. W. HUDLESTON, Chief Secretary to Government, Fort St. George, dated Madras, 24th April 1873.

Having, in accordance with Proceedings of Government dated 24th January 1873, No. 125, Financial Department, audited the accounts of the Madras Municipality for the official year 1871-72, I have the honour to submit the following report for the information of His Excellency the Right Honourable the Governor in Council.

2. In the first place I have to observe that the latter only of the two statements submitted to Government by the Officiating President on 20th December last, viz., that for the period named above, required to be audited, as the other was the statement for ten months of that period.

3. In G. O., dated 25th April 1871, No. 539, Public Department, it was laid down that the accounts for the three months—January to March 1871—were to be audited by the officer who should be appointed to audit those of 1871-72. I have, therefore, examined the books for that period also, and the two statements* submitted by the President for the fifteen months from 1st January 1871 to 31st March 1872, duly verified by me, accompany this report.

* *a*. From 1st January to 31st March 1871.
b. From 1st April 1871 to 31st March 1872.

4. I adopted the same course of examination as on last occasion, and checked every entry in the cash-book with the vouchers produced in support of the same. One or two slight defects were discovered and rectified before I admitted the sufficiency of the vouchers.

5. The posting of the transactions of November into the ledger were checked by me as a test of the general accuracy of the books in this respect, and all entries were found to have been correctly made.

6. The closing entries, on 31st March 1871 and 31st March 1872, were also checked in detail, and found to be in order.

7. Although the transactions under review terminated upwards of a-year ago, I presume Government would wish me to offer such remarks upon the statements submitted by the Municipality as occur to me, in order that the prominent features thereof may be before them.

I.—*Statement from January to March* 1871.

RECEIPT SIDE.—It is not equitable to compare the receipts of all items of revenue with one-fourth of the Budget-Estimate on their account, because of two large sources of income, "Rates on houses," &c., and "Government contribution towards maintenance of roads," no portion is due till after 31st March; but in the case of those in which a fair comparison can be instituted the result shows a very considerable deficiency:—

Liquor License-tax failed to the extent of upwards of			...	Rupees	2,000
Tax on carriages	do.	do.	...	„	3,700
Tolls (Farm)	do.	do.	...	„	4,000 arising from

December's instalment having been paid within that month in place of in January.

DISBURSEMENT SIDE.—The disbursements amounted to Rupees 54,000 less than one-fourth of the Budget grant, the principal items being—

Public Works, New, upwards of	Rupees	6,000
Do. Repairs, do.	„	14,000 principally upon roads.

This arose from the Contractors not being able to finish the work given out within the first three months of the year and bills in consequence remaining unpaid.

Contributions to Government (on account of Police)	Rupees	18,000
Interest on loan on Water-works, &c., and Sinking Fund for liquidation of the loan upwards of...	„	4,000
Census	„	2,875

The expenses during this period were met from advances not on paid bills. Against the item "Reserve for unpaid bills" no sum is entered; but Rupees 10,000 are stated to have been disbursed on account of this grant and charged to respective special heads.

II.—*Statement for the official year* 1871-72.

RECEIPT SIDE.—As the actual receipts were increased by two extraneous items aggregating Rupees 66,870, of which I shall speak hereafter, the fairest test of the year's operations is made by comparing the estimates of reliable revenue with the receipts thereof, that is, omitting from the estimates the two last items amounting to Rupees 47,800, and from the receipts the last sum of Rupees 1,70,162, which

includes the Rupees 66,000 above referred to. The result of the comparison is that the income fell short by Rupees 20,000 of the estimates, the principal items being—

Rates on houses, &c.	upwards of Rs.	7,000
Ground-rents	" "	4,000
Tax on carriages, &c.	" "	7,000
Miscellaneous	nearly "	7,000

But on the other hand—

Tax on arts, &c., produced nearly Rupees 3,000, and Liquor License-tax upwards of Rupees 1,700 more than the estimates.

The Rupees 66,370 consisted of—

1. A loan from the Madras Bank of Rupees 30,000 on the security of the Government paper* which the Municipality possessed ; and

* Rs. 37,800 in the four per cent. loans.

2. The proceeds of that security which realized Rupees 36,371-0-2,† after deducting Bank's Commission and Brokerage on the sale, which was effected in February 1872, and by which the loan was repaid.

† The difference of Annas 13 and Pies 10 between this amount and the sum entered in the statement is the Income-tax on the interest due on the securities, which should have been debited to "Contingent—Miscellaneous," instead of being deducted from the proceeds of the securities.

An item of Rupees 12,800 under "Improvements," being estimated proceeds of sale of houses in Vepery High Road, has not been realized even in part, as the work, I am given to understand, could not be undertaken during the past year.

Disbursement side.—To admit of a fair comparison between Budget Grant and Payments, the item of Rupees 35,000, "Reserve for unpaid bills" under the former, and the last item of Rupees 1,32,922-0-6, *minus* educational payments, Rupees 2,840-12-0 under the latter, must be left out of account. The amounts will then be as follow :—

Grant	Rs.	5,87,671
Payments	"	5,65,498

and the difference, Rupees 22,173, is accounted for as follows :—

Expenditure less than grant on account of—

Establishment, Conservancy Department, out-door, upwards of ... Rs. 11,000

Public Works, New ... ... nearly " 15,000

On buildings, roads, and improvements, Rupees 24,000 less than the grants were spent, while on new metalling of roads and on drains Rupees 9,000 in excess of grants were expended.

Hospitals, Dispensaries, and Vaccination	nearly Rs.	10,500
Lighting	upwards of "	4,000
Water-Works Loan	nearly "	12,000
Educational Grants	" "	1,700

Expenditure in excess of grant on account of—

Salaries ... ... upwards of Rs. 4,000

Subsequently recovered from Water-Works Project.

Public Works—Repairs... ... ... nearly Rs. 6,000

On maintenance of roads, avenues, and fences upwards of Rupees 18,000 more than grants were laid out ; but on buildings, drains, and on miscellaneous items, the outlay was Rupees 12,300 under the amount proposed.

Contributions to Government ... ... upwards of Rs. 15,000

This arises from the payment of nearly Rupees 18,000 on account of Police not disbursed before 31st March 1871, referred to above, and from upwards of Rupees 2,000 on account of Contagious Diseases' Act remaining unpaid at end of official year.

Census ... ... upwards of Rs. 8,000

But a moiety of the total expenditure under the head will be recovered from Government.

8. I would here observe that the entries of the "Government paper" and of "Miscellaneous" under "Contingent" do not correspond with the sums in the ledger under these heads, and there seems to be no reason why the former should not have been shown at *par* value, and the latter at the full sum as per ledger when the items in the statement submitted by the President would have tallied with the books. The difference consists of the loss, which arose from the sale of the securities, being deducted from the items on both sides of the account, so as to show the *net* sum realized on the Government paper ; but the course which ought to have been adopted was to explain the amount of loss in a note on the Disbursement side keeping the items at the sums entered in ledger.

9. As the statements under review do not show the financial position of the Municipality, I have framed Appendices C and D, from which it will be seen that the Municipal Fund stood on 31st March 1871 at Rupees 79,789-0-7, and on 31st March 1872 at Rs. 55,560-0-1, which sums are very much less than the amount at credit on 1st January 1871.

10. The balance in the Madras Bank, on 31st March 1871, as per Pass-book, was Rupees 11,833-13-4, or Rupees 2,689-1-9 in excess of the sum shown in Appendix C. This was the amount of fifteen cheques drawn but not cashed before that date. The balance, as per Pass-book, on 31st March 1872, was Rupees 16,071-3-5, being Rupees 7,998-15-3 above the sum as per Appendix D, the amount of thirty-six outstanding cheques.

11. I desire again to record my testimony of the very satisfactory way in which the books and vouchers of the General Department are kept. Mr. W. H. Axelby, the Manager, deserves much credit for this, particularly because the work has very largely increased, while his establishment is of the same strength as it was in 1866. The following is a copy of a statement which has been prepared in the Municipal Office, showing the amount of work then and now :—

	No. of Vouchers.	No. of Cheques.	No. of entries in Ledger.	No. of Accounts.
In 1866	1,476	650	2,443	86
In 1871-72... ...	2,607	1,121	7,903	295

12. In conclusion, I have to acknowledge my personal obligations to Mr. Axelby for the very great assistance he has given me during this audit.

APPENDIX C.—STATEMENT showing the Position of the Madras Municipal Fund on 31st March 1871.

	RS.	A.	P.
Balance from calendar year 1870 brought forward	96,235	6	1
Receipts from 1st January to 31st March 1871	89,209	2	0
Total ...	1,85,444	8	1

	RS.	A.	P.
Payments from 1st January to 31st March 1871 ...	1,05,705	7	6
Balance at credit of Fund	79,739	0	7
Total ...	1,85,444	8	1

Consisting of—	RS.	A.	P.
Cash in Bank of Madras ...	9,144	11	7
Govt. Securities aggregating ...	37,300	0	0
Value of office premises ...	21,000	0	0
Advances recoverable	10,724	13	10
Standing advances	611	8	0
Sinking Fund for liquidation of Water-Works Loan	1,972	1	2
	80,753	2	7

Less liabilities—	RS.	A.	P.
Amount due to the Farmer of Tolls ...	174	8	0
Amount due to Govt. on account of Income-tax.	395	10	0
Amount received from Govt. to be expended on the Conservancy of Left Wing Lines at Perambore ...	444	0	0
	1,014	2	0
As above ...	79,739	0	7

APPENDIX D.—STATEMENT showing the Position of the Madras Municipal Fund on 31st March 1872.

	RS.	A.	P.
Balance on 31st March 1871 brought forward	79,739	0	7
Receipts in official year 1871-72.	5,30,989	7	1
Total ...	6,10,728	7	8

	RS.	A.	P.
Payments in official year 1871-72	5,55,168	7	7
Balance at credit of Fund on 31st March 1872 ...	55,560	0	1
Total ...	6,10,728	7	8

Consisting of—	RS.	A.	P.
Cash in Bank of Madras ...	8,072	4	2
Value of office premises ...	21,000	0	0
Advances recoverable ...	10,404	4	2
Standing advances ...	1,281	8	0
Sinking Fund for liquidation of Water-Works Loan ...	15,428	11	9
	56,186	12	1

Less liabilities—	RS.	A.	P.
Amount due to the Farmer of Tolls.	43	8	0
Amount due to Government on account of Income-tax ...	139	4	0
Amount received from Government to be expended on the Conservancy of Left Wing Lines at Perambore ...	444	0	0
	626	12	0
As above ...	55,560	0	1

(Signed) W. DONALD, *Auditor*.

ORDER THEREON, 4th June 1873, No. 777.

With the first of the letters above recorded, the President of the Madras Municipality forwards the annual report for the year 1871-72, and in the second, the Auditor submits his report on the accounts for the same period and for the three months preceding.

2. The following table shows the financial operations and position of the Municipality, between the 1st April 1871 and the 31st March 1872, according to accounts verified by the Auditor :—

Receipts.

	RS.	RS.
Rates on houses		2,39,643
Ground-rent		1,908
Tax on arts, &c.		90,246
Liquor License-tax		11,722
Tax on carriages, horses, &c.		37,738
Registration of carts		13,050
Tolls		48,133
Miscellaneous		2,52,068
Receipts as shown in Statement II. ...		6,94,508
Deduct.		
Advances recovered	94,814	
Loan	80,000	
Government paper sold ...	36,370	
Composition for tolls on account of Farmers	1,514	
Income-tax on account of Government	821	
Refund...	1,202	
		1,64,721
Net Receipts ...		5,29,787
Balance in favour of Municipality on 1st April 1871		79,739
Total...		6,09,526

Expenditure.

	RS.	RS.
Head Office		69,388
Collector's Establishment		20,849
Assessor's do.		3,213
Engineer's do.		7,897
Conservancy do.		1,29,504
Other Conservancy Charges		21,268
New Works.		
Buildings	6,723	
Roads...	16,320	
Improvements	18,921	
Drains	11,478	
		53,442
Repairs.		
Buildings	4,593	
Roads...	79,878	
Drains	1,769	
Miscellaneous	7,175	
		93,415
Hospitals, Dispensaries, and Vaccination		31,418
Police		17,872
Contagious Diseases' Act		9,804
Lighting		21,849
Interest on loan for Water Works ...		26,916
Sinking Fund for do. ...		13,457
Census		18,612
Miscellaneous		1,63,679
Expenditure as shown in Statement II.		6,95,580
Add—		
Loss on sale of Government Paper.		930
		6,96,510
Deduct.		
Composition to Toll Farmers...	1,645	
Income-tax to Government ...	1,077	
Repayment of Loan	80,000	
Advances recoverable	95,168	
Transferred to Sinking Fund...	13,457	
Refunds	1,202	
		1,42,544
Net Expenditure...		5,53,966
Cash	8,072	
Premises	21,000	
Advances recoverable... ...	10,404	
Standing advances	1,282	
Sinking Fund for liquidation of Water-Works Loan ...	15,429	
	56,187	
Less liabilities	627	
		55,560
Total...		6,09,526

3. The above table is exclusive of the expenditure on the Water Works from a loan, amounting to Rupees 10,35,000, of which a separate account is given in the body of the report, so that it appears that, during the year 1871-72, the expenditure on the ordinary current work of the Municipality, together with the interest on the Water-Works Loan, exceeded the ordinary revenue of the year by Rupees 24,179, to meet which certain Government paper was sold at a loss of Rupees 929, and the assets of the Municipality reduced thereby to the very small sum of Rupees 55,560, of which Rupees 15,429 belong to a Sinking Fund for the liquidation of the Water-Works Loan. The Government are aware that the Commissioners are now engaged on determining the best method for obtaining an increase of revenue which is evidently a necessity under the circumstances, and they are glad to observe, from the President's report, that the importance of adopting the best measures for the realisation of existing dues has not been overlooked. They trust also that the Commissioners have not failed fully to realize the necessity of economizing the expenditure in every possible manner as the incidence of the already existing taxation is very high indeed.

4. The rates on houses realised in the town of Madras, with its population of 397,552 souls, Rupees 2,39,642 against Rupees 2,24,991 in the whole of the Provincial Municipalities with an aggregate population of 1,167,428. The incidence of this tax per head of the population was Rupee 0-9-7¾, which is higher than in any Provincial Municipality except Ootacamund. As the maximum rate of 7½ per cent on the rental is levied in several of the latter, the high rate of incidence in Madras must be ascribed to the larger proportion of good houses in the occupation of the inhabitants.

5. The tax on arts produced Rupees 90,246 against Rupees 1,54,611 in the Provincial Municipalities, the incidence in Madras being Rupee 0-3-7½ per head of the population which is much about the average incidence elsewhere. The incidence per head of tax-payer was Rupees 13-1-7 in Madras. In the Provincial Municipalities the maximum was Rupees 7-0-8 at Guntoor. The tax on vehicles with springs and animals realized Rupees 37,739 against Rupees 54,262 in the Provincial Municipalities. The Government observe that the President was dissatisfied with the working of this tax during the year under review; and, as the rates are the same in all the Municipalities of the Presidency, the revenue from this source seems much less than it ought to be in Madras where the number of spring vehicles and horses, on account of which high rates are charged, probably exceeds the number to be found in all the Mofussil Municipalities put together. The excess realized in the latter can hardly be entirely owing to the larger number of bullocks and buffaloes paying the comparatively trifling tax of ·8 Annas per head. The fees for the registration of carts appear to have produced a fair revenue, and the other items of receipts call for no special notice.

6 The Government have perused with very great interest the late Mr. Gover's report on the working of the Sanitary Department. The excessively high estimate of the population of the Municipality hitherto accepted, and the consequent apparently satisfactory state of the death-rate, must undoubtedly have tended to prevent a full appreciation of the urgent necessity of thorough and complete sanitary measures, but the late Census in fixing the population at the unexpectedly low figure of 397,552 souls has dissipated the illusions so calculated to inspire feelings of security and of satisfaction with the existing state of things, and has disclosed the startling fact that the death-rate of Madras, in the year under review, was as high as 33·2 per mille, which would place the mortality of Madras only second to that of Glasgow amongst European large cities, and of Delhi amongst the large towns of India. The normal death-rate, calculated on an average of twelve years ending in 1870, appears to be somewhat lower, namely, 30·7 per mille, varying, as below, in the different Divisions of the Municipality :—

1st	Division,	Royapoorum and neighbourhood	21·6.
2nd	Do.	Pedda Naick's Pettah, Fort, &c.	42·0.
3rd	Do.	Muttiyalapetta, &c.	19·1.
4th	Do.	Perambore, &c.	19·7.
5th	Do.	(Vepery) Egmore, &c.	29·8.
6th	Do.	Kilpauk, Nungumbaukum, &c.	32·8.
7th	Do.	(Chintadrepetta) Triplicane	36·0.
8th	Do.	(St. Thomé) Royapetta	33·2.

7. The detailed table, from which the above is abstracted, is most significant and instructive, and Mr. Gover's remarks thereon appear to have ample justification. In the body of the President's report it is stated that the Municipality has ever regretted, in rendering an account of each year's work, that nothing had been done to improve the drainage, and, after pointing out that difficulty had been experienced in obtaining the services of a competent Engineer from the Public Works Department, it is added that the Commissioners come to the conclusion that it was desirable to wait until their own Engineer could undertake the work before taking any further action in the matter. The present state of things, however, is a crying evil which will brook no further delay, and the Commissioners will report whether their Engineer has now sufficient leisure to enable him to take the work on hand at once.

8. The progress of the water-supply project is satisfactory, and the abundance of water now within the town has removed one of the great obstacles in the way of carrying out the requisite improvement in the drainage. The report on the working of the sewage farms is most interesting, and the Government do not doubt that the successful results of the experiment will greatly assist the Commissioners in arriving at a determination as to the system of drainage to be adopted. It is observed from the last report of the Sanitary Commissioner that he is satisfied of the feasibility of utilizing the sewage of the town for agricultural purposes.

9. The remodelling of the Parcherries appears to be a useful work successfully carried out in the year under review and capable eventually of extension on a large scale with satisfactory results after the completion of the drainage works which ought, for the present, to command the whole available means and energies of the Commissioners.

10. The question of the administration of vaccination operations in the Municipality has been separately considered in recent Proceedings. The working of the other Departments appears to have been fairly successful, and calls for no special remark.

11. A fee of Rupees 600 is sanctioned to Mr. Donald, from Municipal funds, for the work of auditing the accounts for a period of fifteen months.

(True extract.)

W. HUDLESTON,
Chief Secretary.

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